



# COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

NORTHERN REGIONAL OFFICE

13901 Crown Court, Woodbridge, Virginia 22193

(703) 583-3800

www.deq.virginia.gov

Molly Joseph Ward  
Secretary of Natural Resources

David K. Paylor  
Director

Thomas A. Faha  
Regional Director

## COMMONWEALTH OF VIRGINIA Department of Environmental Quality Northern Regional Office

### STATEMENT OF LEGAL AND FACTUAL BASIS

Cellofoam North America, Inc.  
Fredericksburg, Virginia  
Permit No. NRO-40779

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Cellofoam North America, Inc. has applied for a Title V Operating Permit for its Fredericksburg, Virginia facility. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Engineer/Permit Contact: Thomas Valentour  
Thomas Valentour  
(703) 583-3931

Date: 11/8/2017

Air Permit Manager: James B. LaFratta  
James B. LaFratta

Date: 11/8/2017

Regional Director: Thomas A. Faha  
Thomas A. Faha

Date: 11-14-17

## **FACILITY INFORMATION**

### Permittee

Cellofoam North America, Inc.  
P.O. Box  
Conyers, Georgia 30503

### Facility

Cellofoam North America, Inc.  
57 Joseph Mills Drive  
Fredericksburg, Virginia 22404 (Spotsylvania County)

County-Plant Identification Number: 51-177-00058

## **SOURCE DESCRIPTION**

NAICS Code: 326140 – *This industry comprises establishments primarily engaged in manufacturing polystyrene foam products. The facility manufactures expanded polystyrene products primarily, but not exclusively, for construction, architectural forms, insulation, packing, filler, and packaging.*

Cellofoam's Fredericksburg, Virginia facility manufactures polystyrene insulation boards for the construction industry. Expandable polystyrene (EPS) beads, with pentane as the blowing agent, are received at the facility in 1,000 pound bags. The beads are first pre-expanded in a non-pressurized vessel and are exposed to low pressure steam from a natural gas fired boiler. After pre expansion, the beads are dried, screened and transported to aging bags for cooling and stabilization for four to 48 hours. The stabilized beads are then conveyed to block molding machines in which pressurized steam is injected and the expanded beads fuse together to form large (48 inches x 24 inches x 192 inches max) insulation blocks of expanded polystyrene. The molded product is then sent to storage for aging and stabilization for approximately one to 28 days, depending on the product specification. The aged blocks are then cut with hot wire to the desired sizes. The finished product is wrapped and shipped off site.

Pentane loss (a volatile organic compound) through the board manufacturing process constitutes the primary source of emissions from this facility.

The facility is a Title V major source of volatile organic compounds (VOCs) since its potential to emit VOC is 177.3 tons per year, as limited in the facility's minor New Source Review (mNSR) Permit issued July 22, 2010. Cellofoam informed the DEQ on April 16, 2014 that it was replacing two shape molding machines (Ref. Nos. AE and AM) with lower capacity shape molding machines. This was a notification letter; therefore the equipment change has been incorporated into this permit.

The facility is located in a PSD area for all pollutants, but also part of the Fredericksburg Ozone Maintenance Area (9 VAC 5-20-203).

The facility's current Title V permit is dated October 10, 2012 with effective date also October 10, 2012. A Title V renewal application dated January 17, 2017 was received by DEQ on

January 31, 2017 and was determined to be timely and complete. Additional information was received February 8, 2017.

### **COMPLIANCE STATUS**

A full compliance evaluation of this facility, including a site visit, was most recently conducted on October 20, 2016. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at this time.

**EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION**

<b>Fuel Burning Equipment:</b>							
<b>Emission Unit ID</b>	<b>Stack ID</b>	<b>Emission Unit Description</b>	<b>Size/Rated Capacity*</b>	<b>Pollution Control Device (PCD) Description</b>	<b>PCD ID</b>	<b>Pollutant Controlled</b>	<b>Applicable Permit Date</b>
AB	2	One (1) Cleaver Brooks natural gas fired boiler, Model No. CB600-200	8.4 MMBtu/hr	--	--	--	7/22/10
<b>Process Equipment:</b>							
<b>Emission Unit ID</b>	<b>Stack ID</b>	<b>Emission Unit Description</b>	<b>Size/Rated Capacity*</b>	<b>Pollution Control Device (PCD) Description</b>	<b>PCD ID</b>	<b>Pollutant Controlled</b>	<b>Applicable Permit Date</b>
AE		One (1) Kurtz shape mold, Model No. K-1014	0.03 tons/hr	--	--	--	4/16/2014 letter
AF	10	One (1) Dingledein expander, Model No. V-A-K	1.5 tons/hour	--	--	--	7/22/10
AL	11	One (1) Sunghoontech shape mold, Model No. SHM-1614VSN	0.22 tons/hr	--	--	--	7/22/10
AM	12	One (1) Kurtz shape mold, Model No. K-1014	0.03 tons/hr	--	--	--	4/16/2014 letter

<b>Process Equipment (continued):</b>							
<b>Emission Unit ID</b>	<b>Stack ID</b>	<b>Emission Unit Description</b>	<b>Size/Rated Capacity*</b>	<b>Pollution Control Device (PCD) Description</b>	<b>PCD ID</b>	<b>Pollutant Controlled</b>	<b>Applicable Permit Date</b>
AG	6, 9	Bead Storage Drying Rooms,	1.4 tons/hr (Block); 28 parts/hr (shape)	--	--	--	7/22/10
AD	4	One (1) Dae Kong block mold, Model No. DKB-416VS	4,200 lbs/hr	--	--	--	7/22/10
AC	3	One (1) Dae Kong expander, Model No. DKF-1800SP	2,000 lbs/hr	--	--	--	7/22/10

\*The Size/Rated capacity is provided for informational purposes only, and is not an applicable requirement.

**EMISSIONS INVENTORY**

A copy of the 2016 annual emission update is provided as Attachment A. The facility's criteria emissions are summarized in the table below. The facility is also expected to have a trace amount of hazardous air pollutants (e.g., formaldehyde) as a result of natural gas combustion in the boilers.

2016 Actual Emissions

2016 Criteria Pollutant Emission in Tons/Year From Molding Operation
VOC
34.69

2016 Criteria Pollutant Emission in Tons/Year from Boilers			
CO	SO <sub>2</sub>	PM <sub>10</sub>	NO <sub>x</sub>
0.55	0.00	0.05	0.65

**EMISSION UNIT APPLICABLE REQUIREMENTS**

**Fuel Burning Equipment (Ref. No. AB) –**

The following applicable requirements are from the facility's mNSR Permit (July 22, 2010), which is provided as Attachment B. Note: The mNSR Permit references an additional natural gas fired boiler, an Industrial Boiler Co., Model No. PPF753PUC607, unit with maximum rated heat input capacity of 3.15 million BTU per hour. This unit was replaced in November 2016, with a similar size boiler (also natural gas fired). The replacement boiler is categorically exempt from mNSR permitting requirements of 9 VAC 5-80-1100 *et seq.* and is also considered an "insignificant activity" per 9 VAC 5-80-720 C.2.a (see listing of all insignificant activities later in this document). The permit annual emission factors have not been revised to reflect the removal of the original boiler. The annual permitted emissions for the one boiler are above the PTE for that boiler, but the PTE for the 3.15 MMBtu/hr boiler are 1.31 tons/year of NO<sub>x</sub>, and 1.10 tons/year of CO. These emissions are considered insignificant.

**Limitations**

Condition 1 identifies the approved fuel for the boiler (Ref. No. AB) as natural gas per Condition 4 of 7/22/10 mNSR permit.

Condition 2 sets the short term and annual NO<sub>x</sub> and CO emission limits for the boiler (Ref. No. AB) per Condition 5 of 7/22/10 mNSR permit.

Condition 3 limits visible emissions to five percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed ten percent opacity per Condition 7 of 7/22/10 mNSR permit.

### **Recordkeeping**

The permit includes requirements for maintaining records of all monitoring and testing required by the permit. These records include:

- a. The monthly and annual throughput of natural gas (in million cubic feet) for the boiler. The annual throughput shall be calculated monthly as the sum of each consecutive twelve (12) month period (for annual emissions estimates). The annual emission limits of nitrogen oxides (as NO<sub>2</sub>) and CO as listed above are based on the boiler operating 8760 hours per year at maximum rated capacity.
- b. All VEE and emission stack test reports.
- c. Personnel training records, written operating procedures and boiler maintenance schedule.

### **Testing**

The permit does not require source tests for the boiler. The Department and EPA have authority to require testing not included in this permit, if necessary, to determine compliance with an emission limit or standard.

### **Process Equipment Requirements – (Ref. No. AE, AF, AL, AM, AG, AD, AC, and AE)**

The following applicable limitations are State BACT requirements from Conditions 2, 3, and 6 of the mNSR Permit (July 22, 2010).

#### **Limitations**

Condition 9 limits hourly and annual VOC emissions to 162.0 lbs/hr and 177.3 tons per year, respectively, per Condition 6 of 7/22/10 mNSR permit.

Condition 10 limits pentane emissions by using product that contains no more than 4.8% (by weight) pentane on an average weekly basis per Condition 2 of 7/22/10 mNSR

Condition 11 limits facility production to 5427 tons of expanded polystyrene per year, per Condition 3 of 7/22/10 mNSR permit.

### **Monitoring & Recordkeeping**

The permit includes requirements for maintaining records of all monitoring and testing required per Condition 11 of 7/22/10 minor NSR permit. These records include:

- a. Weekly and monthly hours of operation of the molding machines,
- b. Annual production of expanded polystyrene
- c. Hourly, monthly, and annual VOC calculations
- d. Receipts of all raw materials (polystyrene beads) purchased, showing the average percent by weight of pentane.
- e. Scheduled and unscheduled maintenance and operator training.

### **Testing**

Stack testing is not required because the polystyrene beads are required to contain no more than 4.8 percent by weight of pentane on a weekly average basis. Reasonable assurance of compliance for the emissions is demonstrated using the recordkeeping requirements as discussed in the previous section. The emissions are also not emitted from a stack, but are emitted in the pre expansion, aging and storage, and high pressure steam molding process.

### **Streamlined Requirements**

As previously mentioned, the 3.15 mmBTU natural gas fired boiler (included in the 7/22/10 mNSR Permit) has been replaced and the terms and conditions in the mNSR Permit for this unit have not been included in the draft Title V Permit Renewal.

### **INSIGNIFICANT EMISSION UNITS**

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

The new Cleaver Brooks natural gas fired boiler (Ref. No. AN) has a stated maximum rated heat input capacity of 6.0 MMBtu/hr. This unit is considered 'insignificant activity' under 9 VAC 5-80-720.C.2.a (fuel burning equipment or combustion units with heat input levels less than 10 million Btu per hour rated input, using natural gas).

Insignificant emission units include the following:

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
AN	Cleaver Brooks NG fired boiler	9 VAC 5-80-720 B	NOx CO VOC PM	6 MMBtu/hr boiler
AH	Block Storage	9 VAC 5-80-720 B	VOC	--
AI	Hot Wire Cutters	9 VAC 5-80-720 B	VOC	--
AJ	Roll Laminator	9 VAC 5-80-720 B	VOC	--
AK	Shipping	9 VAC 5-80-720 B	VOC	--
BA	Electric Air Compressor	9 VAC 5-80-720 B	VOC	--
BB	Vinyl Assembly	9 VAC 5-80-720 B	VOC	--
BC	Scrap Bag	9 VAC 5-80-720 B	VOC	--
BD	Grinder	9 VAC 5-80-720 B	VOC	--
BE	Contour Cutter	9 VAC 5-80-720 B	VOC	--
BF	Fold Form Tie Assembly	9 VAC 5-80-720 B	VOC	--
BG	Down Cutter	9 VAC 5-80-720 B	VOC	--
BH	Lathe	9 VAC 5-80-720 B	VOC	--
BI	Slicer	9 VAC 5-80-720 B	VOC	--
BJ	Fabrication Saw	9 VAC 5-80-720 B	VOC	--

<sup>1</sup>The citation criteria for insignificant activities are as follows:  
 9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application  
 9 VAC 5-80-720 B - Insignificant due to emission levels  
 9 VAC 5-80-720 C - Insignificant due to size or production rate

**INAPPLICABLE REQUIREMENTS**

Citation	Title of Citation	Description of Applicability
40 CFR 60, Subpart DDD	Standards of Performance for Volatile Organic Compound (VOC) Emissions from the Polymer Manufacturing Industry	Is not applicable to this facility because they do not manufacture polystyrene beads.
40 CFR 63 Subpart JJJ	National Emission Standards for Hazardous Air Pollutants - Group IV Polymer and Resins	Is not applicable because the facility does not manufacture polystyrene resin and is not a major source of HAPs.
40 CFR 63 Subpart JJJJJ	National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial and Institutional Boilers Area Sources	This does not apply to natural gas fired only boilers according to 63.11195(e)
40 CFR Part 98	Mandatory Greenhouse Gas Reporting	This facility has not triggered major New Source Review requirements for GHG emissions. Reporting is currently not included in the definition of "applicable requirement" in 40 CFR 70.2 and 71.2

**GENERAL CONDITIONS**

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110 that apply to all Federal-operating permitted sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions.

**Comments on General Conditions**

**Federal Enforceability**

Article 1 (9 VAC 5-80-110 N) states that all terms and conditions in the Title V permit are enforceable by the administrator and citizens under the Federal Clean Air Act, except those that have been designated as only state enforceable.

**Permit Expiration**

This condition refers to the Board taking action on a permit application. The Board is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by §2.2-604 and §10.1-1185 of the *Code of Virginia*, and

the "Department of Environmental Quality Agency Policy Statement No. 2-09".

This general condition cites the sections that follow:

- 9 VAC 5-80-80. Application
- 9 VAC 5-80-140. Permit Shield
- 9 VAC 5-80-150. Action on Permit Applications

### **Failure/Malfunction Reporting**

Section 9VAC5-20-180 requires malfunction and excess emission reporting within four hours of discovery. Section 9VAC5-20-180 is from the general regulations. All affected facilities are subject to section 9VAC5-20-180 including Title V facilities. A facility may make a single report that meets the requirements of 9VAC5-20-180. The report must be made within four daytime business hours of discovery of the malfunction.

This general condition cites the sections that follow:

- 9 VAC 5-40-41. Emissions Monitoring Procedures for Existing Sources
- 9 VAC 5-40-50. Notification, Records and Reporting
- 9 VAC 5-50-50. Notification, Records and Reporting

This general condition contains a citation from the Code of Federal Regulations as follows:  
40 CFR 60.13 (h). Monitoring Requirements.

### **Permit Modification**

This general condition cites the sections that follow:

- 9 VAC 5-80-50. Applicability, Federal Operating Permit For Stationary Sources
- 9 VAC 5-80-190. Changes to Permits.
- 9 VAC 5-80-260. Enforcement.
- 9 VAC 5-80-1100. Applicability, Permits For New and Modified Stationary Sources
- 9 VAC 5-80-1605. Applicability, Permits For Major Stationary Sources and Modifications Located in Prevention of Significant Deterioration Areas
- 9 VAC 5-80-2000. Applicability, Permits for Major Stationary Sources and Major Modifications Locating in Nonattainment Areas

### **Asbestos Requirements**

The Virginia Department of Labor and Industry under Section 40.1-51.20 of the Code of Virginia also holds authority to enforce 40 CFR 61 Subpart M, National Emission Standards for Asbestos.

This general condition contains a citation from the Code of Federal Regulations that follow:

- 40 CFR 61.145, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to demolition and renovation.
- 40 CFR 61.148, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to insulating materials.

40 CFR 61.150, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to waste disposal.

This general condition cites the regulatory sections that follow:  
9 VAC 5-60-70. Designated Emissions Standards  
9 VAC 5-80-110. Permit Content

### **STATE ONLY APPLICABLE REQUIREMENTS**

The permittee did not identify any state only enforceable requirements in their application; therefore, no state only applicable requirements have been included in the Title V permit.

### **FUTURE APPLICABLE REQUIREMENTS**

The permittee did not identify any specific future applicable requirements in their application, and the DEQ is not presently aware of any requirements that may apply to the facility during this Title V permit term. Therefore, no specific future applicable requirements have been included in the Title V permit.

### **CONFIDENTIAL INFORMATION**

The permittee did not submit a request for confidentiality with their application; therefore, all portions of the Title V application are suitable for public review.

### **PUBLIC PARTICIPATION**

In accordance with the public participation requirements of 9 VAC 5-80-270, a public notice of the proposed Title V Permit Renewal will be placed the *Free Lance-Star* for public comment from September 28, 2017 to October 30, 2017. Additionally, persons on DEQ's Title V Permit mailing list will be sent a copy of the notice. A copy of the public notice, the Statement of Legal and Factual Basis (SLFB) and a copy of the draft proposed Title V Permit Renewal will be placed on DEQ's website (under 'Connect with DEQ' tab).

In accordance with 9 VAC 5-80-290, a copy of the proposed Title V Permit Renewal and the SLFB will be provided to EPA Region III (Office of Permits and Air Toxics). Maryland and the District of Columbia will also be provided notice of the draft proposed Title V Permit Renewal.

No comments from the public or the affected states were received during the aforementioned public comment period. On October 31, 2017, EPA Region III sent DEQ-NRO email stating that EPA would not be submitting comments on this permit. Since there were no public comments received, the draft permit remained as proposed permit in concurrent review, with the 45-day review period expiring on November 13, 2017.

**Attachment A**  
**2016 Annual Emissions Update**



Run Date: 11/08/2017 08:47 AM

Commonwealth of Virginia  
Department of Environmental Quality

Registration Number: 40779

Site Name: Cellofoam North America,  
Inc. - Fredericksburg, VA

EIS ID: 6904611

**ROAD MAP REPORT**

Inventory Year: 2016

Release Point #: 1 FUGITIVE PENTANE EMISSION  
EIS ID: 13069312

Unit #: 1 (1) MFG POLYSTYRENE FOAM  
EIS ID: 13232713

Process#: 1 POLY BEADS USED -TONS/YR  
SCC: 30800799 - Other Not Classified  
Throughput: 1069.5 (Tons Product) Limit: 5472 (Tons Product)  
EIS ID: 630114Ash Content (%): 0 Sulfur Content (%): 0

	<u>Factor</u>	<u>Emissions</u>
Volatile Organic Compounds	64.8 lbs/Tons Product	34.6518 tons/yr

Release Point #: 2 Boilers  
EIS ID: 13069412

Unit #: 2 (2) Boilers  
EIS ID: 13232813

Process#: 1 INDUSTRIAL NG-FIRED BOILR  
SCC: 10100604 - Tangentially Fired Units  
Throughput: 0 (Million Cubic Feet Burned) Limit: None  
EIS ID: 630014Ash Content (%): 0 Sulfur Content (%): 0

	<u>Factor</u>	<u>Emissions</u>
Carbon Monoxide	24 lbs/Million Cubic Feet Burned	0 tons/yr
Nitrogen Oxide	170 lbs/Million Cubic Feet Burned	0 tons/yr
Particulate Matter 10	7.6 lbs/Million Cubic Feet Burned	0 tons/yr
Sulfur Dioxide	0.6 lbs/Million Cubic Feet Burned	0 tons/yr
Volatile Organic Compounds	5.5 lbs/Million Cubic Feet Burned	0 tons/yr
Particulate Matter	7.6 lbs/Million Cubic Feet Burned	0 tons/yr

Process#: 2

Cleaver Brooks Boiler - NG Fired

SCC: 10100604 - Tangentially Fired Units

Throughput: 13.03 (Million Cubic Feet Burned)      Limit: None

EIS ID: 134519814 Ash Content (%): 0      Sulfur Content (%): 0

	<u>Factor</u>	<u>Emissions</u>
Carbon Monoxide	84 lbs/Million Cubic Feet Burned	0.54726 tons/yr
Nitrogen Oxide	100 lbs/Million Cubic Feet Burned	0.6515 tons/yr
Particulate Matter 10	7.6 lbs/Million Cubic Feet Burned	0.049514 tons/yr
Particulate Matter 2.5	7.6 lbs/Million Cubic Feet Burned	0.049514 tons/yr
Sulfur Dioxide	0.6 lbs/Million Cubic Feet Burned	0.003909 tons/yr
Volatile Organic Compounds	5.5 lbs/Million Cubic Feet Burned	0.0358325 tons/yr
Particulate Matter	7.6 lbs/Million Cubic Feet Burned	0.049514 tons/yr

**Total Emissions by Pollutant:**

<u>Pollutant</u>	<u>Emission Total (tons/yr)</u>
Carbon Monoxide	0.54726
Nitrogen Oxide	0.6515
Particulate Matter	0.049514
Particulate Matter 10	0.049514
Particulate Matter 2.5	0.049514
Sulfur Dioxide	0.003909
Volatile Organic Compounds	34.6876325

Attachment B  
mNSR Permit dated July 22, 2010





NRO-226-10

# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF ENVIRONMENTAL QUALITY

### NORTHERN REGIONAL OFFICE

Douglas W. Domenech  
Secretary of Natural Resources

13901 Crown Court, Woodbridge, Virginia 22193  
(703) 583-3800 Fax (703) 583-3821  
www.deq.virginia.gov

David K. Paylor  
Director

July 22, 2010

Mr. Joe A. Greene  
President  
Georgia Foam, Inc. ~ Mid Atlantic Foam Division  
P.O. Box 742  
Fredericksburg, Virginia 22404

Registration No.: 40779

Dear Mr. Greene:

Attached is a permit to modify and operate an expanded polystyrene manufacturing facility in accordance with the provisions of the Commonwealth of Virginia State Air Pollution Control Board's (Board) Regulations for the Control and Abatement of Air Pollution (Regulations). This permit supersedes your permit dated

This permit contains legally enforceable conditions. Failure to comply may result in appropriate enforcement. Please read all permit conditions carefully.

In the course of evaluating the application and arriving at a final decision to approve the project, the Department of Environmental Quality (DEQ) deemed the application complete on July 16, 2010.

This permit approval to modify and operate shall not relieve Georgia Foam, Inc. ~ Mid Atlantic Foam Division of the responsibility to comply with all other local, state, and federal permit regulations. Please be aware that after issuance of this permit, Georgia Foam, Inc. ~ Mid-Atlantic Foam will be subject to the requirements of 9 VAC 5-80-50 et. seq, and will be required to file a complete Form 805 (Title V permit application) within twelve months of commencing operation.

The Board's Regulations as contained in Title 9 of the Virginia Administrative Code (VAC) 5-170-200 provide that you may request a formal hearing from this case decision by filing a petition with the Board within thirty days after this case decision notice was mailed or delivered to you. 9 VAC 5-170-200 also provides that you may request direct consideration of

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Mr. Greene  
July 22, 2010  
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the decision by the Board if the Director of the DEQ made the decision. Please consult the relevant regulations for additional requirements for such requests.

As provided by Rule 2A:2 of the Supreme Court of Virginia, you have thirty days from the date you actually received this permit or the date on which it was mailed to you, whichever occurred first, within which to initiate an appeal of this decision by filing a Notice of Appeal with:

David K. Paylor, Director  
Department of Environmental Quality  
P. O. Box 1105  
Richmond, VA 23218

If this permit was delivered to you by mail, three days are added to the thirty-day period in which to file an appeal. Please refer to Part Two A of the Rules of the Supreme Court of Virginia for information on the required content of the Notice of Appeal and for additional requirements governing appeals from decisions of administrative agencies.

If you have any questions concerning this permit, please contact the regional office at 703.583.3800.

Sincerely,



Terry H. Darton  
Regional Air Permit Manager

TAF/THD/EHA/10-226-mnsr

Attachments: Permit

cc: Director, OAPP (electronic file submission)  
Manager/Inspector, Air Compliance  
File

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NRO-226-10

# COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY  
NORTHERN REGIONAL OFFICE

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David K. Paylor  
Director

Thomas A. Faha  
Regional Director

## STATIONARY SOURCE PERMIT TO MODIFY AND OPERATE

This permit supersedes your permit dated June 10, 2005

In compliance with the Federal Clean Air Act and the Commonwealth of Virginia  
Regulations for the Control and Abatement of Air Pollution,

Georgia Foam, Inc.  
Mid-Atlantic Foam Division  
P.O. Box 742  
Fredericksburg, VA 22404  
Registration No.: 40779

is authorized to modify and operate

an expanded polystyrene manufacturing plant

located at

57 Joseph Mills Drive  
Fredericksburg, Virginia 22404

in accordance with the Conditions of this permit.

Approved on: July 22, 2010

  
Thomas A. Faha,  
Regional Director

Permit consists of 10 pages.  
Permit Conditions 1 to 21.

**INTRODUCTION**

This permit approval is based on the permit applications dated December 7, 2009 and March 12, 2010 and supplemental information dated April 12, 2010, May 10, 2010, June 22, 2010, and July 16, 2010. Any changes in the permit application specifications or any existing facilities which alter the impact of the facility on air quality may require a permit. Failure to obtain such a permit prior to construction may result in enforcement action.

Words or terms used in this permit shall have meanings as provided in 9 VAC 5-80-1110 (definitions) and 9 VAC 5-10-20 of the State Air Pollution Control Board's (Board) Regulations for the Control and Abatement of Air Pollution (Regulations). The regulatory reference or authority for each condition is listed in parentheses () after each condition.

Annual requirements to fulfill legal obligations to maintain current stationary source emissions data will necessitate a prompt response by the permittee to requests by the Department of Environmental Quality (DEQ) or the Board for information to include, as appropriate: process and production data; changes in control equipment; and operating schedules. Such requests for information from the DEQ will either be in writing or by personal contact.

The availability of information submitted to the DEQ or the Board will be governed by applicable provisions of the Freedom of Information Act, §§ 2.2-3700 through 2.2-3714 of the Code of Virginia, § 10.1-1314 (addressing information provided to the Board) of the Code of Virginia, and 9 VAC 5-170-60 of the State Air Pollution Control Board Regulations. Information provided to federal officials is subject to appropriate federal law and regulations governing confidentiality of such information.

**PROCESS REQUIREMENTS**

**1. Equipment List -**

<b>Equipment to be Constructed:</b>			
<b>Reference No.</b>	<b>Equipment Description</b>	<b>Rated Capacity</b>	<b>Federal Requirements</b>
AF	One (1) Dingledein expander, Model No. V-A-K	1.5 tons/hour	N/A
AL	One (1) Sunghoontech shape mold, Model No. SHM-1614VSN	0.22 tons/hr	N/A
AM	One (1) Sunghoontech shape mold, Model No. SHM-400VS	0.21 tons/hr	N/A
AG	Bead Storage Drying Rooms,	1.4 tons/hr (Block); 28 parts/hr (shape)	N/A

<b>Equipment permitted prior to the date of this permit:</b>				
<b>Reference No.</b>	<b>Equipment Description</b>	<b>Rated Capacity</b>	<b>Federal Requirements</b>	<b>Original Permit Date</b>
AB	One (1) Cleaver Brooks natural gas fired boiler, Model No. CB600-200	8.4 MMBtu/hr	N/A	06/10/05
AA	One (1) Industrial Boiler Co. natural gas fired boiler, Model No. PPF753PUC607	3.15 MMBtu/hr	N/A	06/09/94
AD	One (1) Dae Kong block mold, Model No. DKB-416VS	4,200 lbs/hr	N/A	06/10/05
AC	One (1) Dae Kong expander, Model No. DKF-1800SP	2,000 lbs/hr	N/A	06/10/05
AE	One (1) Dae Kong shape molds, Model No. 400 SVS	480 lbs/hr	N/A	06/10/05

Specifications included in the permit under this Condition are for informational purposes only and do not form enforceable terms or conditions of the permit unless the specifications are needed to form the basis for one or more of the other terms or conditions in the permit.  
 (9 VAC 80-1180 D 3)

- Emission Controls** – No later than sixty days after issuance of this permit, emissions from the expanded polystyrene manufacturing facility shall be controlled by use of raw material (polystyrene beads) containing no more than 4.8 percent by weight of pentane on a weekly average basis. Refer to Condition 11 for record keeping requirements to demonstrate compliance with this condition.  
 (9 VAC 5-80-1180 and 9 VAC 5-50-260)

**OPERATING LIMITATIONS**

- Production** - The production of expanded polystyrene shall not exceed 5472 tons per year, calculated monthly as the sum of each consecutive twelve-month period. Refer to Condition 11 for record keeping requirements to demonstrate compliance with this condition.  
 (9 VAC 5-80-1180)
- Fuel Specification**- The approved fuels for the boilers (Ref. No. AA and AB) shall be natural gas that meets the specifications below:  
 (9 VAC 5-80-1180)

**NATURAL GAS:**

Minimum heat content:

1,000 Btu/cf HHV

as determined by ASTM D1826, D2382, or a DEQ-approved equivalent method.  
A change in the fuel type may require a permit to modify and operate.  
(9 VAC 5-80-1180)

### **EMISSION LIMITS**

5. **Emission Limits** - Emissions from the operation of the boilers shall not exceed the limits specified below:

	<u>lb/hr</u>	<u>tons/year</u>
NOx	1.1	4.8
CO	0.9	4.1

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits shall be considered credible evidence of the exceedance of emission limits.  
(9 VAC 5-50-260 and 9 VAC 5-50-1180)

6. **Plant-wide Emission Limits** - Total emissions from the operation of the expanded polystyrene manufacturing plant shall not exceed the limits specified below:

	<u>lb/hr<sup>1</sup></u>	<u>tons/year</u>
VOC	162.0	177.3

These emissions are derived from the estimated overall emission contribution from operating limits. Exceedance of the operating limits shall be considered credible evidence of the exceedance of emission limits.

<sup>1</sup>NOTE: that the hourly emission limit is a weekly average; i.e., determination of compliance with the hourly emission limit shall be made by multiplying the total bead throughput for the work week by the pentane emitted from the beads then dividing by the combined total run hours for the expanders (Ref. No. AC and AF) per work week.  
(9 VAC 5-50-260 and 9 VAC 5-50-1180)

7. **Visible Emission Limit** - Visible emissions from the boilers shall not exceed five percent opacity except during one six-minute period in any one hour in which visible emissions shall not exceed ten percent opacity as determined by EPA Method 9 (reference 40 CFR Part 60, Appendix A). This condition applies at all times except during startup, shutdown, and malfunction.

(9 VAC 5-50-80 9 VAC 5-50-260 and 9 VAC 5-80-1180)

### **CONTINUING COMPLIANCE DETERMINATION**

8. **Stack Tests** - Upon request by the DEQ, the permittee shall conduct performance tests for Volatile Organic Compounds from the expanded polystyrene manufacturing facility to

demonstrate compliance with the emission limits contained in this permit. The details of the tests shall be arranged with the Regional Air Compliance Manager of the DEQ's NRO at the address referenced in Condition 10.

(9 VAC 5-80-1200 and 9 VAC 5-50-30 G)

9. **Visible Emissions Evaluation** - Upon request by the DEQ, the permittee shall conduct additional visible emission evaluations from the boilers to demonstrate compliance with the visible emission limits contained in this permit. The details of the tests shall be arranged with the Regional Air Compliance Manager of the DEQ's NRO at the address referenced in Condition 10.

(9 VAC 5-80-1200 and 9 VAC 5-50-30 G)

### **RECORDS**

10. All correspondence concerning this permit should be submitted to the following address -

Regional Air Compliance Manager  
Department of Environmental Quality  
Northern Regional Office  
13901 Crown Court  
Woodbridge, VA 22193

(9 VAC 5-50-50)

11. **On Site Records** - The permittee shall maintain records of emission data and operating parameters as necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with the Regional Air Compliance Manager of the DEQ's NRO at the address referenced in the Condition 10. These records shall include, but are not limited to:

- a. Weekly and monthly hours of operation of the molding machines, calculated monthly as the sum of each consecutive twelve-month period. Compliance for the consecutive twelve-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding eleven months.
- b. Annual production of expanded polystyrene. Compliance for the consecutive twelve-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding eleven months.
- c. Hourly, monthly, and annual VOC calculations to demonstrate compliance with Condition 6. Compliance for the consecutive twelve-month period shall be demonstrated monthly by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding eleven months.

- d. Receipts of all raw materials (polystyrene beads) purchased, showing the average percent by weight of pentane.
- e. Scheduled and unscheduled maintenance and operator training.
- f. All VEE and emission stack test reports.
- g. Records of the occurrence and duration of any bypass, malfunction, shutdown or failure of the facility or its associated air pollution control equipment that results in excess emissions for more than one hour. The records shall be maintained in a form suitable for inspection and maintained for at least two years (unless a longer period is specified in the applicable emission standard) following the date of the occurrence.

These records shall be available for inspection by the DEQ and shall be current for the most recent five years, unless otherwise noted.  
(9 VAC 5-80-1180 and 9 VAC 5-50-50)

### **NOTIFICATIONS**

12. **Initial Notifications** - The permittee shall furnish written notification to the Regional Air Compliance Manager of the DEQ's NRO (at the address referenced in Condition 10) of:
- a. The actual date on which modification of the expanded polystyrene manufacturing facility (Ref. No. AF, AM, AL, and AG) commenced within thirty days after such date.
  - b. The anticipated start-up date of the expanded polystyrene manufacturing facility (Ref. No. AF, AM, AL, and AG) postmarked not more than sixty days nor less than thirty days prior to such date.
  - c. The actual start-up date of the expanded polystyrene manufacturing facility (Ref. No. AF, AM, AL, and AG) within fifteen days after such date.

(9 VAC 5-50-50 and 9 VAC 5-80-1180)

### **GENERAL CONDITIONS**

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#### **13. Certification of Documents**

- A. The following documents submitted to the Board shall be signed by a responsible official: (i) any emission statement, application, form, report, or compliance certification; (ii) any document required to be signed by any provision of the regulations of the Board; or (iii) any other document containing emissions data or compliance information the owner wishes the Board to consider in the administration of its air quality programs. A responsible official is defined as follows:

- 1. For a business entity, such as a corporation, association or cooperative, a responsible official is either:

- a. The president, secretary, treasurer, or a vice president of the business entity in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the business entity; or
  - b. A duly authorized representative of such business entity if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either (i) the facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars) or (ii) the authority to sign documents has been assigned or delegated to such representative in accordance with procedures of the business entity.
2. For a partnership or sole proprietorship, a responsible official is a general partner or the proprietor, respectively.
  3. For a municipality, state, federal, or other public agency, a responsible official is either a principal executive officer or ranking elected official. A principal executive officer of a federal agency includes the chief executive officer having responsibility for the overall operations of the principal geographic unit of the agency.
- B. Any person signing a document under subsection A above shall make the following certification:

*"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering and evaluating the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."*

- C. Subsection B shall be interpreted to mean that the signer must have some form of direction or supervision over the persons gathering the data and preparing the document (the preparers), although the signer need not personally nor directly supervise these activities. The signer need not be in the same line of authority as the preparers, or do the persons gathering the form need to be employees (e.g., outside contractors can be used). It is sufficient that the signer has authority to assure that the necessary actions are taken to prepare a complete and accurate document.

(9 VAC 5-20-230)

14. **Permit Invalidation** – The portions of this permit that pertain to construction of the additional expanded polystyrene manufacturing equipment (Ref. No. AF, AM, AL, and AG) shall become invalid, unless an extension is granted by the DEQ, if:

- a. A program of continuous construction is not commenced within the latest of the following:
  - i. Eighteen months from the date of this permit;
  - ii. Nine months from the date that the last permit or other authorization was issued from any other governmental entity;
  - iii. Nine months from the date of the last resolution of any litigation concerning any such permits or authorization; or
- b. A program of construction is discontinued for a period of eighteen months or more, or is not completed within a reasonable time, except for a DEQ approved period between phases of a phased construction project.

(9 VAC 5-80-1210)

- 15. Permit Suspension/Revocation** - This permit may be suspended or revoked if the permittee:
- a. Knowingly makes material misstatements in the permit application or any amendments to it;
  - b. Fails to comply with the conditions of this permit;
  - c. Fails to comply with any emission standards applicable to a permitted emissions unit, included in this permit;
  - d. Causes emissions from the stationary source which result in violations of, or interfere with the attainment and maintenance of, any ambient air quality standard; or
  - e. Fails to operate in conformance with any applicable control strategy, including any emission standards or emission limitations, in the State Implementation Plan in effect at the time an application for this permit is submitted.

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(9 VAC 5-80-1210 F)

- 16. Right of Entry** - The permittee shall allow authorized local, state, and federal representatives, upon the presentation of credentials:
- a. To enter upon the permittee's premises on which the facility is located or in which any records are required to be kept under the terms and conditions of this permit;
  - b. To have access to and copy at reasonable times any records required to be kept under the terms and conditions of this permit or the State Air Pollution Control Board Regulations;

- c. To inspect at reasonable times any facility, equipment, or process subject to the terms and conditions of this permit or the State Air Pollution Control Board Regulations; and
- d. To sample or test at reasonable times.

For purposes of this condition, the time for inspection shall be deemed reasonable during regular business hours or whenever the facility is in operation. Nothing contained herein shall make an inspection time unreasonable during an emergency.  
(9 VAC 5-170-130 and 9 VAC 5-80-1180)

- 17. Maintenance/Operating Procedures** – At all times, including periods of start-up, shutdown, and malfunction, the permittee shall, to the extent practicable, maintain and operate the affected source, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions.

The permittee shall take the following measures in order to minimize the duration and frequency of excess emissions, with respect to process equipment which affect such emissions:

- a. Develop a maintenance schedule and maintain records of all scheduled and non-scheduled maintenance.
- b. Maintain an inventory of spare parts.
- c. Have available written operating procedures for equipment. These procedures shall be based on the manufacturer's recommendations, at a minimum.
- d. Train operators in the proper operation of all such equipment and familiarize the operators with the written operating procedures, prior to their first operation of such equipment. The permittee shall maintain records of the training provided including the names of trainees, the date of training and the nature of the training.

Records of maintenance and training shall be maintained on site for a period of five years and shall be made available to DEQ personnel upon request.  
(9 VAC 5-50-20 E and 9 VAC 5-80-1180 D)

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- 18. Record of Malfunctions** – The permittee shall maintain records of the occurrence and duration of any bypass, malfunction, shutdown or failure of the facility or its associated air pollution control equipment that results in excess emissions for more than one hour. Records shall include the date, time, duration, description (emission unit, pollutant affected, cause of malfunction), corrective action, preventive measures taken and name of person generating the record.  
(9VAC 5-20-180 J and 9 VAC 5-80-1180 D)

- 19. Notification for Facility or Control Equipment Malfunction** - The permittee shall furnish notification to the Regional Air Compliance Manager of the DEQ's NRO (at the address referenced in Condition 10) of malfunctions of the affected facility or related air pollution control equipment that may cause excess emissions for more than one hour, by facsimile

transmission, telephone, electronic communication, or telegraph. Such notification shall be made as soon as practicable but no later than four daytime business hours after the malfunction is discovered. The permittee shall provide a written statement giving all pertinent facts, including the estimated duration of the breakdown, within two weeks of discovery of the malfunction. When the condition causing the failure or malfunction has been corrected and the equipment is again in operation, the permittee shall notify the Regional Air Compliance Manager of the DEQ's NRO.  
(9 VAC 5-20-180 C and 9 VAC 5-80-1180)

20. **Change of Ownership** - In the case of a transfer of ownership of a stationary source, the new owner shall abide by any current permit issued to the previous owner. The new owner shall notify the Regional Air Compliance Manager of the DEQ's NRO (at the address referenced in Condition 10) of the change of ownership within thirty days of the transfer.  
(9 VAC 5-80-1240)
21. **Permit Copy** - The permittee shall keep a copy of this permit on the premises of the facility to which it applies.  
(9 VAC 5-80-1180)