Asheville-Buncombe Air Quality Agency
APPLICATION REVIEW SUMMARY

SECTION A: FACILITY INFORMATION			
Company Name:	Freudenberg Performance Materials (Freudenberg)		
Site Name:	Freudenberg – Enka Facility		
Mailing Address:	1301 Sand Hill Road, Enka, NC 28728		
Site Address:	1301 Sand Hill Road, Enka, NC 28728		
General Description of Business	Non-woven and geosynthetic fiber manufacturing facility		
Facility Classification:	Title V	**SITE STATUS:**	Existing

SECTION B: APPLICATION INFORMATION			
Date Of Application:	May 24, 2024	**Application Tracking No.:**	NA
Date Complete Application Received:	January 2, 2025	**Board Meeting Date:**	May 14, 2026
Confidentiality Requested?	No	**Board Agenda Type:**	Title V Permit Renewal
Application Results:	The purpose of this review is to renew the Title V operating permit for the facility.		
Permit No. / Date Issued by Application:	11-805-26 / May 14, 2026		
Permit No. / Date Voided by Application:	11-805-19A / March 14, 2024		

SECTION C: REGULATORY INFORMATION	
AB Air Quality Regulations:	4.0503, 4.0515, 4.0516, 4.0521, 4.0524, 4.0530, 4.0535, 4.0958, 4.1111, 4.1806 17.0504, 17.0317, 17.0700

SECTION D: FACILITY-WIDE EMISSIONS INFORMATION

Pollutants Reviewed as a Result of this Application or AB Air Quality Action:	Actual 2023 Emissions (TONS/YR)	Potential Emissions (TONS/YR)	
		Prior to Review	New
PM-Total	13.6*	91.4	91.1
PM-10 / PM-2.5	13.6* / 13.6*	88.7 / 87.8	88.1 / 87.1
SO_2	0.055	83.6	93.3
NO_X	8.25	37.0	26.3
CO	7.81	13.9	6.6
VOC	62.0	249 (with limit)	249 (with limit)
Greenhouse Gases, CO2e	11,171.06	40,043	29,996
All Hazardous Air Pollutants (HAPs)	0.175	0.227	0.226
List all HAPs >10TPY of potential emissions	None		

***Emission numbers denoted with an (*) reflect "controlled" emissions (i.e. emissions reduced by a pollution control device).**

IN COMPLIANCE WITH EMISSION STANDARDS / RECOMMEND APPROVAL			
Prepared by:	Alex Latta /	**Date Completed:**	03/20/2026
Reviewed by:	James C. Raiford /	**Date Approved:**	03/25/2026
Director:	Ashley J. Featherstone /	**Date Approved:**	03/25/2026

SECTION A DETAILS

FACILITY INFORMATION

[Detailed discussion of any items in Section A]

On March 4, 2013, the Agency received notification that Colbond, Inc. had merged with Bonar Technical Fabrics. The legal name of the new company is Bonar, Inc. (Bonar). The permit was amended in 2013 to reflect the change. On September 26, 2016, the Agency received notification that Bonar, Inc. had changed their corporate name to Low & Bonar, Inc. (Low & Bonar). The permit was amended in 2016 to reflect the name change. Low & Bonar manufactures non-woven and geo-synthetic fabrics for various end uses in construction, flooring, and automotive markets.

In the nonwoven process line (M-1 through M-5), polyester (polyethylene terephthalate, PET) and nylon chips (Nylon 6 aka polycaprolactam, polyamide, PA6) are melted and extruded or spun to form a synthetic fiber. Bonar utilizes a two-step process: the yarn is spun and the fleece is then made from the yarn. In the fleecing operation, the fibers are bonded together in a nonwoven fashion to form a blanket. The blankets are trimmed and stored on large rolls. The finished product, called Colback, is used as a backing for carpeting and flat roofing products.

Specifically, Nylon and PET chips are crystallized and dried in dedicated heated conversion processes prior to melting and being combined in the spinning process. A heated extrusion process melts and co-extrudes nylon and PET through spinnerets to produce co-polymer fibers. Individual fibers are combined into a yarn that is collected onto spools. In this process, a VOC-containing lubricant is applied to the surface of individual yarn strands to facilitate movement of the yarn through the equipment. Further in the process, yarn is wound onto spools in the winding cabinets. Ultimately, yarn stored on spools is fed to the fleecing operation step and formed into a non-woven fabric, which is the final product.

In the geo-synthetic process line (G-1 through G-6), nylon or polypropylene chips are melted and then extruded to form a loosely bonded blanket called Enkamat. No individual fibers are spun during this process. After cooling, the blankets are stored on large rolls. The geo-synthetic products or specialty geo-fabrics are used in various erosion control systems and building products, including ridge vents for roofing.

In the application for the initial Title V permit, Bonar provided updated maximum production capacity figures for two of the geo-synthetic fabric extrusion lines (G-3 and G-5). They also requested that G-RES be classified as an insignificant activity. Emissions from G-RES are required to be calculated and reported in accordance with the PSD avoidance condition. For that reason, the source was be included in the permit so that it would be clear that emissions must be included in PSD avoidance calculations.

Three 502(b)(10) changes occurred prior to the 2019 permit renewal. In a letter dated August 3, 2016, Bonar notified the agency of their intention to implement a 502(b)(10) change at their facility (which had been previously discussed with the Agency). Bonar was planning to reroute the M-1 line, which was routed to Filter House 1 (FH-1) to Filter House 2 (FH-2). The polypropylene was being utilized on this line was causing issues with the filter media on FH-1. FH-2 is a packed bed scrubber with a chevron style demister, it was expected to be able to process this material without causing media issues. The change occurred in late 2016. The table in the permit with the source and control device information was updated while the permit was open.

In May of 2017, Low & Bonar contacted the agency regarding the addition of a geosynthetic process line, G-6. This line is the same configuration as G-3, with the same maximum rated capacity. It was determined that this line addition could be handled as a 502(b)(10) change. Low & Bonar submitted the notification letter and checklist in August of 2017. In August of 2018 during the compliance inspection, it was noted that the process was in operation running trials. It was not in full production yet at that time.

In July of 2018, after consultation with the agency, Low & Bonar submitted a 502(b)(10) notification for the replacement of the smog hogs or electrostatic mist collection system that controls emissions from process line G-5. The goal of the project was to increase the capacity of the system in order to improve the collection efficiency of the hood inside the manufacturing area to improve indoor air quality for the

employees. The new system is the same brand, manufacturer, and electrostatic precipitator technology, the only difference is the replacement unit has more airflow capacity, 13,000 CFM compared to 7,600 CFM. The checklist and an updated C2 form were included with the notification. The replacement was completed in 2018.

Additional insignificant activities were added as part of the 2019 renewal including one aerosol can recycling unit, two ink jet printers, and one diesel fired emergency generator. More details regarding those sources are included below.

Facility Process Changes Since Last Renewal:

In February of 2020, Low & Bonar submitted a 502(b)(10) notification for the replacement of two (2) dryers, DRY 1 and DRY 2, and one (1) crystallizer, CRST-2, with new units, CRST-6, CRST-7, DRY-6, and DRY-7. The current units are listed as insignificant activities and the new units will have similar heat input ratings to the units being replaced. This change occurred in March of 2020.

In June of 2021, Low & Bonar submitted a 502(b)(10) notification to change the listed burner size of ESPB-1 and ESPB-2 from 18.8 MMBtu/hr to 21.0 MMBtu/hr to reflect actual burner size of equipment.

These changes were processed during this renewal. The emissions limits for the boilers were updated as part of this renewal since they are based on the heat input.

2024 Administrative Modification:
In an email from Tom Buller on June 29, 2022, Mr. Buller notified the Agency that Freudenberg & Co. had acquired Low and Bonar in May 2020. Because of the pandemic nothing really changed about how they operated in the first year of the acquisition. In 2021 they began merging into the Freudenberg organization. In 2022 they changed the name out front of the business and begun corresponding with customers as Freudenberg Performance Materials. They continued to operate under the Low & Bonar, Inc. legal entity. It was noted that Low and Bonar had complicated financial entities and that it would take awhile to unwind those entities. The company is listed as Freudenberg Performance Materials LP on the NC Secretary of State website.

The Agency received a letter from Tom Buller dated January 9, 2024, which included the ownership change notification and an off-permit change notification. The permit changes were for the insignificant activity list; they included a correction to the heat input rating of STEEL-1 from 0.62 MMBtu/hr to 0.5 MMBtu/hr and only being fired on natural gas and not including propane as a backup fuel source. They noted that the POLY-CHIP activity vented indoors and not outdoors, as they said the permit stated. The facility wants to add an additional STEEL-2, 0.5 MMBtu gas-fired burn off oven and an additional chip handling system – POLY-CHIP-2. Additionally, the facility noted the LIN-1 burn off oven was removed from the facility. An A1 Form was attached that was signed by Donnie Phelps, the Site Executive Officer, as the responsible official, and dated 1/24/24. The Agency responded with a letter and invoice for the $100 administrative fee change on February 14, 2024. Emissions calculations for the burn-off oven were included.

The general conditions in the permit were also updated as part of this renewal.

Facility Requested changes as part of this renewal:

Freudenberg is requesting the following changes to the permit with this renewal:

1. Remove all references to the use of propane at the facility, as the propane tank has been removed from operation. This includes removing propane as a backup fuel for F-1,F-2, DRY-4,CRST-5, DRY-5, STEEL-1 and removing propane from the text of conditions 2.1.D.1.c and 2.1.D.4.c
2. Remove equipment PST, GLUE, and AEROSOL from the permit as the equipment has been removed from operation.
3. Update the following insignificant activities emission source and/or control device descriptions:
    a. POLY-CHIP: change the control device description to read "Closed-loop pneumatic system comprised of numerous dust collectors and a cyclone"
    b. R&D LAB: change emission source description to read "One Research and Development Laboratory known as the 'Quality Lab'"

c. FINISH: change emission source description to read "One finish oil storage area"
d. TRANSFER:
    i. Change emission source description to read "Pneumatic nylon chip transfer operation"
    ii. Change control device description to read "Closed-loop pneumatic system with one (1) vacuum system dust collector"
e. ENKA-CHIP: Change emission source description to read "Closed-loop pneumatic Enkamat chip handling system"
f. INKJET: change emission source description to read "Two ink jet printers utilized for printing on the geo-synthetic lines"

Additionally, Freudenberg identified inconsistencies between the emission calculations and the listed maximum process rates for the G-3 and G-6 process lines and has submitted updated emissions calculations with the renewal application to correctly reflect the maximum process rates listed in the permit. No changes to the permit are requested with the update to the emissions calculations. These changes are reflected on forms A2 and D4 of the renewal application.

Freudenberg also requested that the condition for the emergency engines 40 CFR Part 63 Subpart ZZZZ be updated since rule changes occurred since the last permit was issued.

SECTION B DETAILS

APPLICATION INFORMATION

[List all emission sources (permitted and exempt) reviewed as a result of this application, their associated control devices and pollutants. Provide a detailed discussion of any other items in Section B at bottom under "Application Notes"]

EMISSION SOURCE ID	Emission Source Description 1. Type, manufacturer, capacity 2. Control device with ID (if any)	Pollutant(s) Emitted	Miscellaneous Notes
M-1	One synthetic fiber extrusion and winding process with emissions controlled by one packed bed scrubber equipped with a chevron style demister referred to by the facility as a filter house (FH-2)	PM, PM-10, PM-2.5, VOC	FH-2 is a horizontally-oriented, packed bed wet scrubber with a chevron style demister manufactured by HEE Environmental Engineering, LLC, Model No. ECH 44-5 LB. The pressure drop range is 0.2 to 2.0 inches water column. Packing is polypropylene, total volume of packing is 4x4x5=80 cubic feet, volumetric flow rate is 7,200 cubic feet per minute, and the total liquid injection rate is 80 gallons per minute. The range of operation listed in the permit application forms indicates that the operating range is between 75 and 80 gallons per minute. For more details on the scrubber, please see the notes below from the 2012 permit review and the Title V permit application. Bonar implemented a 502(b)(10) change in 2016 to reroute the M-1 line to FH-2. It had previously been exhausted to FH-1. The maximum material throughput data for this process were revisited during the permit modification in 2012. The maximum process weight rate for M1 is 1,693 pounds per hour; this figure includes PET (polyester) and PA (nylon), which are processed together. Two different scenarios or % throughput combinations of raw materials were provided. The combination with the higher nylon or PA content is used for maximum potential emissions, since nylon results in higher PM emissions. (1,303 pounds polyester or PET + 389 pounds nylon or PA = 1,693 pounds per hour total throughput). Data provided in email correspondence from Dan March of Pisgah Environmental on

			August 20, 2012. In 2014, Bonar began making a new product that utilizes polypropylene and PET. Please see note below for more details regarding the modification that occurred in March of 2014.
M-2	One synthetic fiber extrusion and winding process with emissions controlled by one monomer mist elimination system referred to by the facility as the filter house (FH-1)	PM, PM-10, PM-2.5, VOC	FH-1 utilizes a KOCH flexifiber mist eliminator BD SRF Type II 24120, which utilizes Brownian diffusion and glass fiber filter media. The dual system was custom built and includes an Industrial Air, Inc. vacuum unit and housing with two sets of filtration units; only one operates at a time. Facility operators monitor the pressure drop across the scrubber and when the pressure drop falls below 4.75 inches of water, the exhaust is routed to the second unit and a water spray system flushes the filtration media to clean it and prepare it for reuse. The maximum material throughput data for this process was revisited during the permit modification in 2012. The maximum process weight rate for M2 is 1,058 pounds per hour; this figure includes PET (polyester) and PA (nylon), which are processed together. Two different scenarios or % throughput combinations of raw materials are provided. The combination with the higher nylon or PA content is used for maximum potential emissions, since nylon results in PM emissions and polyester does not. (815 pounds polyester or PET + 243 pounds nylon or PA = 1,058 pounds per hour total throughput). Data provided in email correspondence from Dan March of Pisgah Environmental on August 20, 2012.

M-3	One synthetic fiber extrusion and winding process with emissions controlled by one monomer mist elimination system referred to by the facility as the filter house (FH-1)	PM, PM-10, PM-2.5, VOC	Please see note regarding the control device above under M1. The maximum material throughput data for this process was revisited during the permit modification in 2012. The maximum process weight rate for M3 is 1,058 pounds per hour; this figure includes PET (polyester) and PA (nylon), which are processed together. Two different scenarios or % throughput combinations of raw materials are provided. The combination with the higher nylon or PA content is used for maximum potential emissions, since nylon results in PM emissions and polyester does not. (815 pounds polyester or PET + 243 pounds nylon or PA = 1,058 pounds per hour total throughput). Data provided in email correspondence from Dan March of Pisgah Environmental on August 20, 2012.
M-4	One synthetic fiber extrusion and winding process with emissions controlled by one monomer mist elimination system referred to by the facility as the filter house (FH-1)	PM, PM-10, PM-2.5, VOC	Please see note regarding the control device above under M1. The maximum material throughput data for this process was revisited during the permit modification in 2012. The maximum process weight rate for M4 is 1,285 pounds per hour; this figure includes PET (polyester) and PA (nylon), which are processed together. Unlike M1-M3, only one combination of materials was given (990 pounds polyester or PET + 296 pounds nylon or PA = 1,285 pounds per hour total throughput). Data provided in email correspondence from Dan March of Pisgah Environmental on August 20, 2012.

M-5	One synthetic fiber extrusion and winding process with emissions controlled by one packed bed scrubber equipped with a chevron style demister referred to by the facility as a filter house (FH-2)	PM, PM-10, PM-2.5, VOC	Solvent-based coatings are utilized in this process. Bonar estimates that similar to M1-M4, 96% of the VOCs are emitted at this stage in the process. The other 4% of VOCs are emitted in the fleecing operation that follows (F1 and F2). The maximum process weight rate for M5 is 1,270 pounds per hour; this figure includes PET (polyester) and PA (nylon), which are processed together. Several different scenarios or % throughput combinations of raw materials were provided in the permit application. The combination with the highest nylon or PA content is used for maximum potential emissions, since nylon results in PM emissions and polyester does not. (979 pounds polyester or PET + 291 pounds nylon or PA = 1,270 pounds per hour total throughput). In 2014, Bonar began making a new product that utilizes polypropylene and PET on the M1 line. During this permit review, they indicated that they may also wish to make that product on M5. Please see the note below for more details regarding the modification that occurred in March of 2014 and updated information provided during this review. FH-2 is a horizontally-oriented, packed bed wet scrubber with a chevron style demister manufactured by HEE Environmental Engineering, LLC, Model No. ECH 44-5 LB. The pressure drop range is 0.2 to 2.0 inches water column. Packing is polypropylene, total volume of packing is 4x4x5=80 cubic feet, volumetric flow rate is 7,200 cubic feet per minute, and the total liquid injection rate is 80 gallons per minute. The range of operation listed in the permit application forms indicates that the operating range is between 75 and 80 gallons per minute. For more details on the scrubber, please see the notes below from the 2012 permit review and the Title V permit application.

F-1	One Flamenco non-woven fleecing unit (Unit 1) utilizing a 6.0 MM Btu/hr air heater fired on natural gas	PM, PM-10, PM-2.5, CO, NOx, SO_2, VOC, HAPs/TAPs, GHG	The permit was modified in 2014 to allow Bonar to increase the heat input capacity of this unit from 5.6 MM BTU per hour to 6.0 million BTU per hour. The agency determined that this action required a permit modification since F-1 is a permitted piece of equipment due to the fact that in a letter from Colbond dated June 3, 2003, Colbond estimated that 96% of VOCs from the fiber finish are emitted during the spinning process, and the remaining 4% of VOCs are emitted during the fleecing process.
F-2	One Flamenco non-woven fleecing unit (Unit 2) utilizing a 10.4 MM Btu/hr air heater fired on natural gas	PM, PM-10, PM-2.5, CO, NOx, SO_2, VOC, HAPs/TAPs, GHG	Bonar did not propose any changes to F-2 in 2014. Updated information about heat input capacity was provided as part of that permit modification. The previous permit listed the heat input capacity as 6.7 MM BTU per hour.
G-1	One geo-synthetic fabric extrusion line	PM, PM-10, PM-2.5, VOC	The maximum design input rate for this machine is approximately 550 pounds per hour when utilizing nylon as the raw material, and approximately 451 pounds per hour when utilizing polypropylene.
G-2	One geo-synthetic fabric extrusion line	PM, PM-10, PM-2.5, VOC	The maximum design input rate for this machine is approximately 550 pounds per hour when utilizing nylon as the raw material, and approximately 451 pounds per hour when utilizing polypropylene.

G-3	One geo-synthetic fabric extrusion line	PM, PM-10, PM-2.5, VOC	The maximum design input rate for this machine is approximately 50 pounds per hour when utilizing nylon as the raw material, and approximately 41 pounds per hour when utilizing polypropylene. In this application for the Title V permit, Bonar has indicated that the maximum design input rate for this unit is actually 60 pounds per hour when utilizing nylon as a raw material. An updated figure for polypropylene was not provided in the application. In email correspondence dated July 3, 2014, Steve Jenkins of Bonar indicated that the maximum capacity when utilizing polypropylene is 49 pounds per hour. The maximum capacity figures were not updated when the Title V permit was issued. They will be updated as part of the current renewal.
G-4	One geo-synthetic fabric extrusion line	PM, PM-10, PM-2.5,VOC	The maximum design input rate for this machine is approximately 550 pounds per hour when utilizing nylon as the raw material, and approximately 451 pounds per hour when utilizing polypropylene.

G-5	One geo-synthetic fabric extrusion line	PM, PM-10, PM-2.5, VOC	G-5 may run continuously; the maximum design input rate was previously listed as 2,500 pounds per hour when utilizing nylon as a raw material, and 2,050 pounds per hour when utilizing polypropylene. In the application for the Title V permit, Bonar indicated that the maximum design input rate for this unit is actually 1,800 pounds per hour when utilizing nylon as a raw material. In email correspondence dated July 3rd, Steve Jenkins indicated that the maximum capacity when utilizing polypropylene is 1,476 pounds per hour. This information was updated when the Title V permit was issued. Emissions are routed to a separate exhaust stack and controlled with two electrostatic mist collectors. The manufacturer is United Air Specialists, Inc. Both are Model No. SHN-20-H-M Electrostatic Mist Collectors. The efficiency rating is 95%. The control device description was updated when the Title V permit was issued. In July of 2018, after consultation with the agency, Low & Bonar submitted a 502(b)(10) notification for the replacement of the smog hogs or electrostatic mist collection system that controls emissions from process line G-5. The goal of the project was to increase the capacity of the system in order to improve the collection efficiency of the hood inside the manufacturing area to improve indoor air quality for the employees. The new system is the same brand, manufacturer, electrostatic precipitator technology, same 95% efficiency rating (per application form), the only difference is the replacement unit has more airflow capacity, 13,000 CFM compared to 7,600 CFM, the combined capacity of the two previous units. The checklist and an updated C2 form were included with the notification. The replacement was completed in 2018. The new unit is a CLARCOR-UAS-SMOGHOG Model No. PSG34-2. Total collection plate area is listed as 3,336 ft2.

G-6	One geo-synthetic fabric extrusion line	PM, PM-10, PM-2.5, VOC	This process was added as a 502(b)(10) change in 2017 and added to the permit with the 2019 renewal. In the notification, it was stated that the capacity was the same as G-3. As such, the maximum design input rate for this machine is approximately 60 pounds per hour when utilizing nylon as the raw material, and approximately 49 pounds per hour when utilizing polypropylene.
G-RES	One geo-synthetic fabric extrusion line	PM, PM-10, PM-2.5, VOC	This machine is operated intermittently for research purposes only; maximum design input rate for this machine is approximately 30 pounds per hour when utilizing nylon as the raw material, and approximately 25 pounds per hour when utilizing polypropylene. In addition to utilizing nylon and polypropylene, other raw materials are occasionally tested on this machine for product development purposes. Emissions are exhausted to a separate stack. In a previous permit, this machine was referred to as G-5. In 2008 when Colbond added a production line, they asked that the new machine be referred to as G-5, and that this machine be renamed G-RES. In the Title V permit application, Bonar pointed out that potential emissions are less than 5 tons per year and as such, this source can be listed on the insignificant activity list. Emissions will still need to be calculated and reported in accordance with the PSD avoidance condition. For that reason, the source will be included in the permit so that it will be clear that emissions must be included in PSD avoidance calculations.
ESPB-1	One 21 MMBtu/hr Hurst Series 500 natural gas / No. 2 fuel oil boiler with Industrial Combustion Model DLG-210P Low NOx Burner	PM, PM-10, PM-2.5, CO, NOx, SO_2, VOC, HAPs/TAPs, GHGs	Primary fuel is natural gas with No. 2 fuel oil backup. The boilers burn only natural gas, except during periods of natural gas curtailment and gas supply emergencies, and for testing.
ESPB-2	One 21 MMBtu/hr Hurst Series 500 natural gas / No. 2 fuel oil boiler with Industrial Combustion Model DLG-210P Low NOx Burner	PM, PM-10, PM-2.5, CO, NOx, SO_2, VOC, HAPs/TAPs, GHGs	Primary fuel is natural gas with No. 2 fuel oil backup. The boilers burn only natural gas, except during periods of natural gas curtailment and gas supply emergencies, and for testing.

BER-1	One Berringer electric burn-off oven with emissions controlled by a wet scrubber	PM, PM-10, PM-2.5, VOC, HAP/TAP	The oven is used for cleaning the spinnerets utilized in M1-M4. The spinnerets are disassembled and placed in the oven to melt and bake-off polymer residue. The wet scrubber is inherent to the process. More information is available in a memo to file dated January 9, 2004. The oven is considered an insignificant activity because of size or production rate as defined in AB Air Quality Code 17.0503 – "Definitions."
DRY-4	One Conair dryer (#4) with a maximum heat input capacity of 0.64 MMBtu/hr, fired on natural gas with propane backup	PM, PM-10, PM-2.5, CO, NOx, SO2, VOC, HAPs/TAPs, GHGs	This piece of equipment is an insignificant activity because of size or production rate as defined in AB Air Quality Code 17.0503 – "Definitions."
DRY-5	One Dryer (#5) with a maximum heat input capacity of 0.5 MM Btu/hr, fired on natural gas with propane backup	PM, PM-10, PM-2.5, CO, NOx, SO2, VOC, HAPs/TAPs, GHGs	The dryer, added to serve M5, is similar to the two existing units on other production lines. This piece of equipment is exempt from permitting as an insignificant activity because of size or production rate as defined in AB Air Quality Code 17.0503 – "Definitions."
DRY 6 & 7	Two Novatec dryers with maximum heat input capacities of 0.72 MM Btu/hr each, fired on natural gas with propane backup (Replaced Dryers # 1 and 2)	PM, PM-10, PM-2.5, CO, NOx, SO_2, VOC, HAPs/TAPs, GHGs	These pieces of equipment are currently exempt from permitting per AB Air Quality 17.0102(c)(2)(B)(ii). These sources are considered insignificant activities because of size or production rate as defined in AB Air Quality Code 17.0503 – "Definitions."
CRST-5	One Crystallizer (#5) with a maximum heat input capacity of 0.35 MM Btu/hr, fired on natural gas with propane backup	PM, PM-10, PM-2.5, CO, NOx, SO2, VOC, HAPs/TAPs, GHGs	The crystallizer was added to serve M5 and is similar to the two existing units on other production lines. This piece of equipment is considered an insignificant activity because of size or production rate as defined in AB Air Quality Code 17.0503 – "Definitions."
CRST-6	One Novatec crystallizer with a maximum heat input capacity of 0.54 MM Btu/hr, fired on natural gas (Crystallizer #6 Replaced Crystallizer #2)	PM, PM-10, PM-2.5, CO, NOx, SO_2, VOC, HAPs/TAPs, GHGs	This piece of equipment is currently exempt from permitting per AB Air Quality 17.0102(c)(2)(B)(ii). This source meets the definition of an insignificant activity because of size or production rate as defined in AB Air Quality Code 17.0503 – "Definitions."

CRST-7	One Novatec crystallizer with a maximum heat input capacity of 0.54 MM Btu/hr, fired on natural gas (Crystallizer #7 was added when Crystallizer #2 was replaced)	PM, PM-10, PM-2.5, CO, NOx, SO2, VOC, HAPs/TAPs, GHGs	This piece of equipment is currently exempt from permitting per AB Air Quality 17.0102(c)(2)(B)(ii). This source meets the definition of an insignificant activity because of size or production rate as defined in AB Air Quality Code 17.0503 – "Definitions."
ETC-1	One edge trim collection system with emissions controlled by one Flex-Kleen baghouse with 339 square feet of filter area	PM, PM-10, PM-2.5	The maximum material throughput for the edge trim collection system is 140 pounds of material per hour. Maximum potential emissions from this process were revisited as part of the Title V permit review. Potential uncontrolled PM emissions are now less than five tons per year. Under the Title V procedures, ETC-1 is considered an insignificant activity because of size or production rate as defined in AB Air Quality Code 17.0503 – "Definitions." Regarding the control device, the Title V permit application states that the minimum and maximum pressure drop are 4.0 and 6.0 inches water column, respectively. 2002 Model No. 84WSBS64M32.
PST	One 10,000 gallon aboveground propane storage tank	VOC	This unit has been removed and the permit will updated with the 2024 renewal.
POLY-CHIP, POLY-CHIP-2	Two polyester and nylon chip handling system with emissions controlled by numerous dust collectors and a cyclone	PM, PM-10, PM-2.5	POLY-CHIP-2 was added as part of this modification. The dust collectors are located throughout the facility, and are part of a dust collection system that collects dust moving through the pipes in the winding process. The dust is routed to a cyclone that exhausts indoors. None of the dust collectors is exhausted to the outdoor atmosphere, so they are considered an insignificant activity because of size or production rate as defined in AB Air Quality Code 17.0503 – "Definitions."
~~GLUE~~	~~One glue press~~	~~VOC~~	~~The glue press is considered an insignificant activity because of size or production rate as defined in AB Air Quality Code 17.0503 – "Definitions." This unit has been removed and will updated with the 2024 renewal.~~
LIN-1	One Lindberg electric burn-off oven.	PM, PM-10, PM-2.5	This unit has been removed and the permit will updated with the 2024 renewal.

TANKS1-2	Two 15,000 gallon No. 2 fuel oil tanks and supply systems	VOC	Fuel oil tanks are for backup for the boilers. These storage tanks are considered insignificant activities because of size or production rate as defined in AB Air Quality Code 17.0503 – "Definitions."
CHILL	Three (3) chillers with a total capacity of approximately 1,500 tons	PM, PM-10, PM-2.5	Refrigerant 134A. This equipment is an insignificant activity because of category as defined in AB Air Quality Code 17.0503 – "Definitions."
PYRO OVEN	One pyrolitic polymer cleaning oven with emissions controlled by a catalytic afterburner.	PM, PM-10, PM-2.5, CO, NOx	Manufacturer: SCHWING Fluid Technik GmbH. Model #: VacuClean 454T. This piece of equipment considered an insignificant activity because of size or production rate as defined in AB Air Quality Code 17.0503 – "Definitions."
R&D LAB	One Research and Development Laboratory known as the "Quality Lab."	VOCs	This process is considered an insignificant activity because of size or production rate as defined in AB Air Quality Code 17.0503 – "Definitions".
BOIL-3	One natural gas fired Hurst model cyclone hot water boiler with a maximum rated input of 2.5 MM Btu/hr	PM, PM-10, PM-2.5, CO, NOx, SO_2, VOC, HAPs/TAPs, GHGs	This boiler runs exclusively on natural gas; No. 2 fuel oil is not utilized as a backup fuel. This piece of equipment is considered an insignificant activity because of size or production rate as defined in AB Air Quality Code 17.0503 – "Definitions."
FINISH	Finish oil storage area	VOC	Sealed totes are stored in this area. This area is not vented to the atmosphere. The finish oil storage area is considered an insignificant activity because of size or production rate as defined in AB Air Quality Code 17.0503 – "Definitions."
TRANSFER	Pneumatic nylon chip transfer operation with emissions controlled by a closed-loop pneumatic system with one (1) vacuum system dust collector	PM, PM-10, PM-2.5	The nylon chip transfer system is a closed loop system and is considered an insignificant activity because of size or production rate as defined in AB Air Quality Code 17.0503 – "Definitions."

ENKA-CHIP	Closed-loop pneumatic Enkamat chip handling system	PM, PM-10, PM-2.5	This area is located in a room adjacent to the geo-synthetic process lines. Six storage bunkers and 2 chip handlers are utilized here to store raw material (resin chips) for the geo-synthetic process. The area is not vented outdoors. It is considered an insignificant activity because of size or production rate as defined in AB Air Quality Code 17.0503 – "Definitions." There are 2 Conair dryers and 2 Novatec dryers in this area that are used for drying nylon chips. These dryers are electric and as such, not expected to have air pollution emissions.
STEEL-1, STEEL-2	Two Steelman burn-off oven with a maximum heat input capacity of 0.5 MMBtu/hr, fired on natural gas	PM, PM-10, PM-2.5, CO, NOx, SO_2, VOC, HAPs/TAPs, GHGs	STEEL-2 was added as part of the 2024 modification. They are considered an insignificant activity because of size or production rate as defined in AB Air Quality Code 17.0503 – "Definitions."
AEROSOL	One aerosol can recycling unit	VOC, HAPs/TAPs	This unit has been removed and the permit will updated with the 2024 renewal.
GEN-1	One diesel fired emergency generator with a rated output capacity of 20 kW	PM, PM-10, PM-2.5, CO, NOx, SO_2, VOC, HAPs/TAPs, GHGs	Generac 20kW Model 2834080100. Manufactured in 2002. This source was noted by Low & Bonar in an internal audit in 2017 and brought to the agency's attention at that time. Generac engine is used for lift station pumps to pump effluent from plant to MSD in the event of a power failure. This engine is classified as an insignificant activity, but is subject to GACT standard ZZZZ. As such it is listed under permitted equipment to include the requirements for ZZZZ.

GEN-2	One diesel fired emergency generator with a rated output capacity of 200 kW	PM, PM-10, PM-2.5, CO, NOx, SO_2, VOC, HAPs/TAPs, GHGs	Olympian Generator Model D200P4. Manufactured in 2001. This source was added to the permit in 2019. This engine is located on adjacent property owned by Fletcher Partners. Low & Bonar operates and maintains the generator for the flood pumps that help control water during storm and flood conditions. The generator is included in the definition of 'facility' since it is on adjoining property under common control. This engine is classified as an insignificant activity but is subject to GACT standard ZZZZ. As such it is listed under permitted equipment to include the requirements for ZZZZ.
INKJET	Two ink jet printers utilized for printing on the geo-synthetic lines	VOC/TAP	Ink jet printers utilized to print labels for products manufactured on lines G-3 and G-5. Applicability determinations were submitted in 2017 and 2018. Worst case emissions were estimated at 0.52 tons per year and 10 pounds per year MEK for lines G-3 and G-5 respectively. The printers are considered insignificant activities because of size or production rate as defined in AB Air Quality Code 17.0503 – "Definitions."

APPLICATION NOTES

M-1 and M-5:

Prior to submitting the application for the burner tube replacement in 2014, Bonar notified the Agency of plans to produce a new product on one of their spinning machines (M-1). The new product will require the use of a different raw material, polypropylene, and a different finish material. EPA emission factors that this Agency was not previously aware of indicate that the use of polypropylene will result in additional PM and VOC emissions from the spinning process. The new finish material is water based, rather than solvent based, and as such, emissions from the finish will decrease. The modification to the M1 line resulting in a change in emissions was processed as part of that permit action. Bonar estimates that maximum material throughput is 85,000 pounds of polypropylene per month. The proportion of PET to polypropylene is estimated to be the same as that for nylon, as provided for the 2012 permit modification. Potential PM emissions from nylon are higher than those from polypropylene. As such, the PM emission limit and maximum potential hourly emission rates will be based on the product that utilizes nylon and polyester as raw materials.

As part of the review for the initial Title V permit in 2014, Steve Jenkins provided updated information regarding maximum throughput rates for the polypropylene based product on M-1. Email correspondence dated August 28, 2014 is attached to that review. Bonar estimates that maximum throughput for the M1 line for this product is 240 pounds of polypropylene and 760 pounds of PET per hour. Bonar may also wish to produce this product on the M-5 line in the future. The maximum throughput for the M-5 line for this product is estimated to be 229 pounds of polypropylene and 726 pounds of PET per hour. Potential PM emissions from nylon are higher than those from polypropylene. As such, the PM emission limit and maximum potential hourly emission rates will be based on the product that utilizes nylon and polyester as raw materials.

The production figures submitted by the facility in Appendix B.1 for the renewal in 2024 are outdated figures that were also submitted in the prior facility permit renewal application. As such, they do not match the figures used by the agency in our calculations which are more conservative.

M5 Scrubber:

The specifications from the manufacturer that were submitted in 2012 state that the scrubber is 99% efficient at removing particles greater than or equal to 5 microns in size. No data is available for efficiency for other particle sizes. No particle size data was provided for caprolactam (a component of Nylon 6) in the application. An inhalation study by the United Nations Environment Programme estimated particle size for caprolactam in the PM-2.5 range. An EPA fact sheet on packed bed scrubbers states that typical PM collection efficiencies range from 50 to 95% (http://www.epa.gov/ttn/catc/dir1/fpack.pdf). The fact sheet references another document, which states that collection efficiency for PM-2.5 and PM-10 in a packed bed scrubber is "poor," so it was determined that a value near the low end of the range may be most appropriate (http://www.epa.gov/ttn/catc/dir1/fpack.pdf; please see page 5.4-27 for the table and there is a discussion at the beginning of section 5.4). The control efficiency previously reported by Bonar for the scrubber that serves M-1-M-4 was reconsidered as part of the 2012 review. The original source test on which that figure was based has never been submitted to this agency. The summary available from the 2010 permit renewal review is not specific to particle size. The control efficiency used by this Agency has been updated to 50% as part of the 2012 review. If Bonar wishes to conduct source testing to establish more accurate control efficiencies for future emissions inventories and permit applications, they will need to submit source test protocols, notifications, and test data to this agency for review. A statement to this effect was included in the cover letter of the permit in 2012.

In the 2014 Title V application, on page 3, there is a discussion regarding the particulate matter control efficiency associated with M5 and the fact that the Agency explained in the permit cover letter to Bonar dated September 11, 2012 our rationale for using a conservative figure of 50% for FH1 and FH2. The application mentions this and states that regarding FH-2, "This is a new control device installed in 2012. The manufacturer guarantees a control efficiency of 99 percent for particulate matter less than five microns; the range of aerodynamic diameters expected of caprolactam monomers in the Colback fiber process. This control efficiency is used in the calculations presented in table 7." No manufacturer data was provided. I contacted Steve Jenkins of Bonar via email and attached previous email correspondence between me, Dan March, and HEE Environmental Engineering from 2012. In that message, HEE indicated that they have no data for control efficiencies for particles less than 5 microns in diameter. On July 3, 2014, Mr. Jenkins indicated that he did not have any further supporting documentation to suggest a control device efficiency greater than 50%. As such, we will continue to use the 50% factor unless new information is provided or a source test is conducted.

Insignificant Activities

Updated information on the heat input capacities and status of the dryers and crystallizers was provided by Steve Jenkins of Bonar as part of the Title V permit review in 2014. That information was adjusted accordingly. Please see email correspondence from Steve Jenkins in the Title V permit review for more details.

Current Renewal

In the current application for this renewal in 2024, Appendix B, outdated production figures were submitted for M-1, M-2, and G-3. G-6 was also affected since the production rate is the same as G-3. The updated more conservative figures will be used. This information will be passed on to the facility permit contact. Appendix B also listed the control efficiency of the filter house FH-2 as 99%. As discussed above, the agency will continue to use the 50% figure. These same incorrect figures were submitted in the 2019 permit renewal for this facility. The agency will plan to notify the facility and consultant that the production figures in the application (appendix B) do not match those in the permit, which were updated in 2012.

SECTION C DETAILS

REGULATORY INFORMATION

(Identify the AB Air Quality Regulations reviewed because of this application. At a minimum, the regulations already listed should be reviewed and reason given for applicability or non-applicability. If a regulation has a standard, list the standard and indicate how the source is in compliance.)

AB Air Quality Regulation Number / Title	Emission Source ID No(s). Subject	Notes on Regulation (Compliance demonstration, applicability, etc.)
17.0500 – Title V Procedures	Entire Facility	The facility is subject to Title V permitting procedures because potential emissions are in excess of the 100-ton per year applicability threshold for VOCs. In accordance with the current permit, PPPI submitted an application to renew the Title V permit on May 24, 2024 (application was due on June 30, 2024). Since the permit application was submitted 9 months prior to permit expiration, the permit will not expire until the renewal permit has been issued or denied. All terms and conditions of the existing permit shall remain in effect until the renewal permit has been issued or denied.
17.0700 – Toxic Air Pollutant Procedures	Entire Facility	The facility was reviewed for NC Air Toxics when the permit was modified in March of 2014 to allow an increase in heat input capacity to F-1. The combustion equipment on the fleecing units is below permitting thresholds and as such, would normally not trigger a toxics review. But, since the equipment is permitted due to emissions associated with the finish oils, the increase in the heat input capacity to F-1 did result in an increase in potential emissions from natural gas combustion and did trigger a toxics review. Actual emissions from all combustion sources were below the TPERs. For the current permit renewal, no new combustion sources or sources of TAPs have been added to the facility since the last review. GEN-1, a 20 KW diesel-fired emergency engine and GEN-2, a 200 KW diesel-fired emergency engine are considered an insignificant activity under 17. 0503 and were added to the permit in 2019 so that the relevant requirements for GACT ZZZZ can be included. These sources were manufactured in 2001 and 2002 and as such, is exempt from NC Air Toxics under Chapter 17. 0702(a)(18). The toxics evaluation was not revisited as part of this renewal.
4.0524 – New Source Performance Standards	ESPB-1, ESPB-2	The facility is subject to 40 CFR Part 60, Subpart Dc – "Standards of Performance for Small Industrial-Commercial-

		Institutional Steam Generating Units." To maintain compliance with the SO_2 requirements of this regulation, the facility will monitor the sulfur content of the No. 2 fuel oil combusted in the boilers to ensure that it does not exceed 0.5% by weight. The facility is also required to maintain monthly records of the amount of fuel oil and natural gas burned in the boilers. In lieu of tracking natural gas combustion for each boiler, the facility can monitor total natural gas consumption for the facility. The facility reports the results of the monitoring to this Agency on a semi-annual basis.
4.0530 – Prevention of Significant Deterioration and 17.0317 – Avoidance Conditions	Entire Facility	When the permit was modified in 2012, the maximum potential VOC emissions increased to over 250 tons per year. In order to avoid PSD applicability, a limit of 247 tons of VOCs per year was included in the permit. Low & Bonar is required to track and report 12 month rolling average VOC emissions for M-1-M-5 (including the non-combustion portion emitted by F-1 and F-2) to ensure compliance with this limitation. Potential VOC emissions from combustion sources (permitted and unpermitted) are no more than 2 tons per year regardless of fuel type. There are no other significant VOC sources. A limit of 247 tons per year VOCs for M-1-M-5, F-1-F-2, and G-1-G6 and G-RES should be sufficient to ensure the facility's emissions remain below 250 tons per year.
4.1111 – MACT (40 CFR 63, Subpart JJJJJJ)	ESPB-1, ESPB-2	The permitted boilers are potentially subject to 40 CFR Part 63, Subpart JJJJJJ – "National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers," which was promulgated by EPA on March 21, 2011. The rule is generally applicable to solid and liquid fuel-fired boilers; however, boilers that are also gas-fired and burn liquid fuel only during periods of gas curtailment, gas supply emergencies, or for periodic testing not to exceed 48 hours during any calendar year are not subject to this subpart. Bonar submitted the initial notification in which they stated that they were not subject to the rule because the boilers burn only natural gas, except during periods of natural gas curtailment and gas supply emergencies, and for testing. If Bonar indicates that they wish to have the flexibility to burn fuel oil more often than just during periods of natural gas curtailment, the requirements would include a one-time energy assessment and biennial tune-ups. If the boilers are

		equipped with oxygen trim systems, tune-ups can be conducted every five years. When the permit was modified in 2011, relevant requirements of this subpart were added to the permit in case the facility wishes to operate the boilers on fuel oil in the future. Since that time, the requirements were amended by EPA. This condition in the permit was updated when the permit was modified in March of 2014.
4.1111 – MACT (40 CFR 63, Subpart ZZZZ)	GEN-1, GEN-2	GEN-1 and GEN-2 are subject to 40 CFR 63, Subpart ZZZZ, "National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines." Low & Bonar is classified as an area source of hazardous air pollutants. Compliance is achieved through work practice standards and maintenance activities. This condition was updated as part of this renewal since rule updates have been made since the permit was last issued.
4.0503 - Particulates from Fuel Burning Indirect Heat Exchangers	ESPB-1, ESPB-2	ESPB-1 and ESPB-2 burn natural gas with No. 2 fuel oil back-up; actual emission rates are well below the standard.
4.0515 – Particulates from Miscellaneous Industrial Processes	M-1, M-2, M-3, M-4, M-5, G-1, G-2, G-3, G-4, G-5, G-6, G-RES	M-1 has an hourly emissions limit of 3.67 pounds per hour; potential uncontrolled emissions are 4.71 pounds per hour and potential controlled emissions are 2.35 pounds per hour. M-2 and M3 each have an hourly emissions limit of 2.68 pounds per hour; potential uncontrolled emissions are 2.94 pounds per hour and potential controlled emissions are 1.47 pounds per hour. M-4 has an hourly emissions limit of 3.05 pounds per hour; potential uncontrolled emissions are 3.58 pounds per hour and potential controlled emissions are 1.79 pounds per hour. M-5 has an hourly emissions limit of 3.02 pounds per hour; potential uncontrolled emissions are 3.52 pounds per hour and potential controlled emissions are 1.76 pounds per hour. Compliance is expected as long as the control devices are operating properly. Please see the notes section below for additional details. G-1, G-2, and G-4 each have an hourly emissions limit of 1.73 pounds per hour when utilizing nylon and 1.51 pounds per hour when utilizing polypropylene; potential uncontrolled emissions are 0.050 pounds per hour with nylon and 0.311 pounds per hour with polypropylene for each machine. G-3 and G-6 have hourly emissions limits of 0.391 pounds per hour when utilizing nylon and 0.342 pounds per hour when utilizing polypropylene; potential uncontrolled emissions are 0.0054 pounds per hour with nylon and 0.034 pounds per

		hour with polypropylene. G-5 has an hourly emissions limit of 3.82 pounds per hour when utilizing nylon and 3.34 pounds per hour when utilizing polypropylene; potential uncontrolled emissions are 0.162 pounds per hour with nylon and 1.02 pounds per hour with polypropylene. G-RES has an hourly emissions limit of 0.246 pounds per hour when utilizing nylon and 0.218 pounds per hour when utilizing polypropylene; potential uncontrolled emissions are 0.0027 pounds per hour with nylon and 0.017 pounds per hour with polypropylene.
4.0516 – Sulfur Dioxide Emissions from Combustion Sources	ESPB-1, ESPB-2, F-1,F-2	This regulation limits SO_2 emissions from these sources to 2.3 lb/MMBtu. The AP-42 SO_2 emission factor for natural gas combustion for each boiler (ESPB-1, ESPB-2) is 0.001 lb/MMBtu. The boilers are subject to the SO_2 emission limit of NSPS Subpart Dc when burning No. 2 fuel oil. Thus, the facility is expected to be in compliance.
4.0521 – Control of Visible Emissions	M-1, M-2, M-3, M-4, M-5, F-1, F-2, G-1, G-2, G-3, G-4, G-5, G-6, G-RES, ESPB-1, ESPB-2	This regulation limits visible emissions from each of these emission sources to no greater than 20% opacity due to their post-1971 manufacture date. Compliance with this regulation will be determined through facility self-monitoring and Agency inspections. This regulation does not apply to emission sources subject to AB Air Quality Code 4.0524 – New Source Performance Standards if the NSPS has a visible emission standard. The boilers are subject to NSPS Subpart Dc, which does not have a visible emission (opacity) standard for boilers with a heat input capacity under 30 MMBtu/hr.
4.1806 – Control and Prohibition of Odorous Emissions	Entire Facility	This regulation requires that the facility prevent odorous emissions from causing or contributing to objectionable odors beyond their property line. Compliance with this regulation will be determined through Agency inspections.

REGULATORY NOTES

4.0515 – Particulates from Miscellaneous Industrial Processes. The particulate matter limits were calculated according to the appropriate equation in 4.0515 of the AB Air Quality code. Input parameters were as follows:

- M-1 through M-5, G-1 through G-5: Please see process weight rates listed above in Section B Details. Limits and worst-case emissions were calculated for the two different raw materials that are utilized on the G lines. Please see the attached spreadsheet for more details on limits and potential emissions for the G lines.

Inspection and maintenance requirements are included in the permit to address the control devices that reduce particulate matter emissions from M-1-M-5. Potential uncontrolled emissions from M-1-M-5 are higher than the particulate matter limit for those sources. Potential uncontrolled emissions for G-1 through G-6 are less than the emissions limits for those sources. Inspection and maintenance

requirements for the control devices serving M-1 through M-5 are included in the permit. Inspection and maintenance requirements for the control device that serves G-5 will not be included in the permit since maximum potential uncontrolled emissions are less than permitted limits.

4.0503 – Particulates from Fuel Burning Indirect Heat Exchangers. The allowable emission limit for each boiler was calculated according to the following equation:

Allowable PM Emission Limit = $(1.090) \times (42.0)^{-0.2594}$ = 0.413 lb/MMBtu heat input,

where 42.0 is the total maximum heat input capacity of both permitted boilers (2 x 21.0 MMBtu/hr).

4.0524 – New Source Performance Standards. GEN-1 and GEN-2 are not subject to NSPS Subpart IIII since they were manufactured prior to 2006.

SECTION D DETAILS				
EMISSION INFORMATION				
Calculation Method Codes (List all that apply)	1 = Stack test result 2 = Material (mass) balance 3 = EPA approved information (AP-42, CTG, etc.) 4 = Other (specify in table below)			
Calculation Rejection Codes (List all that apply)	1 = Calculation error 2 = Wrong emission factor(s) used 3 = Control efficiency(ies) not accepted 4 = Other (specify in table below)			
Emission Source (ID No.)	**Calculation Method Code**	**Accept or Reject?**	**Calculation Rejection Code**	**AB Air Quality Calculations Attached?**
M-1, M-2, M-3, M-4, M-5	2, 3	NA	NA	Yes
F-1 and F-2	2, 3	NA	NA	Yes
G-1, G-2, G-3, G-4, G-5, G-6, G-RES	1	NA	NA	Yes
ESPB-1, ESPB-2, Unpermitted Dryers and Crystallizers	3	NA	NA	Yes
ETC-1	2	NA	NA	Yes

EMISSION NOTES

Potential emissions are based on back up fuels, which are No. 2 fuel oil for the 2 permitted boilers. The small natural gas boiler that was added in 2008 is included in the potential emissions calculations. Maximum potential VOC emissions are based on maximum material throughput submitted by Bonar in the revised permit application they submitted in July of 2012 and updates for G-3 and G-5 that were submitted in the Title V application and an application that was submitted to modify the burners on the fleecing unit in 2014. 2013 emissions and potential emissions associated with the M and G lines were revised during the March 2014 permit modification and the permit review for the Title V permit to incorporate additional emission factors for PM and VOCs from melt spinning of polyester (PET), nylon 6, and polypropylene from EPA's AP-42, Fifth Edition, Compilation of Air Pollution Emission Factors, Volume 1, Chapter 6.9, Synthetic Fibers. This Agency was not previously aware of these factors. The use of these additional factors resulted in a slight increase in actual and potential PM and VOC emissions from the main product line.

Polypropylene is a polyolefin. AP-42 factors were used to calculate emissions from M-1 and M-5 when using that raw material. With the addition of the PM and VOC factors from AP-42 and then accounting for the very low VOC content of the spin finish for the product that will utilize polypropylene, it was determined that VOC and PM emissions would be significantly less compared to the product that utilizes nylon and the higher VOC content spin finish. The finish oil that is utilized when M-1 utilizes polypropylene has a volatile content of 0.05% as 2-(2-butoxyethoxy)ethanol (CAS # 112-34-5), which is a glycol ether. Glycol ethers are considered a HAP, but not a TAP.

Material usage data from 2024 that were submitted by Bonar in the annual emissions inventory were utilized to calculate 2024 emissions. The production figures submitted by the facility in Appendix B.1 for the renewal in 2024 are outdated figures that were also submitted in the prior facility permit renewal application. The Agency is using the more conservative production figures from 2012 to calculate potential emissions. Also, potential emissions were updated to remove propane as a back-up fuel and to change the boiler heat input rating.

SECTION E

SUPPORTING DOCUMENTATION

(Provide brief description of any attachments)

1. Permit application
2. Copy of 502(b)(10) notification for replacement of DRY 1, DRY-2, and CRST-2 with DRY-6, DRY-7, CRST-6, and CRST-7
3. Draft permit
4. Permit cover letter
5. Emission calculations
6. Draft Public Notice