



TECHNICAL SUPPORT DOCUMENT

**Air Discharge Permit 25-3688
Air Discharge Permit Application CL-3285**

Issued: March 5, 2025

H B Fuller

SWCAA ID – 146

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ABBREVIATIONS

List of Acronyms

ADP.....Air Discharge Permit	NOV.....Notice of Violation/
AP-42Compilation of Emission Factors, AP-42, 5th Edition, Volume 1, Stationary Point and Area Sources – published by EPA	NSPS.....New Source Performance Standard
ASIL.....Acceptable Source Impact Level	PSDPrevention of Significant Deterioration
BACT.....Best available control technology	RACT.....Reasonably Available Control Technology
BARTBest Available Retrofit Technology	RCWRevised Code of Washington
CAMCompliance Assurance Monitoring	SCC.....Source Classification Code
CAS#.....Chemical Abstracts Service registry number	SDSSafety Data Sheet
CFR.....Code of Federal Regulations	SQERSmall Quantity Emission Rate listed in WAC 173-460
EPA.....U.S. Environmental Protection Agency	StandardStandard conditions at a temperature of 68°F (20°C) and a pressure of 29.92 in Hg (760 mm Hg)
EUEmission Unit	SWCAASouthwest Clean Air Agency
LAER.....Lowest achievable emission rate	T-BACT.....Best Available Control Technology for toxic air pollutants
MACT.....Maximum Achievable Control Technologies	WACWashington Administrative Code
mfr.....Manufacturer	
NESHAP.....National Emission Standards for Hazardous Air Pollutants	

List of Units and Measures

µg/m ³Micrograms per cubic meter	MMBtu.....Million British thermal unit
µmMicrometer (10 ⁻⁶ meter)	MMcfMillion cubic feet
acfm.....Actual cubic foot per minute	ppmParts per million
bhp.....Brake horsepower	ppmvParts per million by volume
dscfm.....Dry Standard cubic foot per minute	ppmvdParts per million by volume, dry
g/dscm.....Grams per dry Standard cubic meter	ppmw.....Parts per million by weight
gpmGallon per minute	psig.....Pounds per square inch, gauge
gr/dscfGrain per dry standard cubic foot	rpmRevolution per minute
hp.....Horsepower	scfm.....Standard cubic foot per minute
hp-hrHorsepower-hour	tphTon per hour
	tpyTons per year

List of Chemical Symbols, Formulas, and Pollutants

C ₃ H ₈	Propane	O ₃	Ozone
CH ₄	Methane	PM.....	Particulate Matter with an aerodynamic diameter 100 μm or less
CO	Carbon monoxide	PM ₁₀	PM with an aerodynamic diameter 10 μm or less
CO ₂	Carbon dioxide	PM _{2.5}	PM with an aerodynamic diameter 2.5 μm or less
CO ₂ e.....	Carbon dioxide equivalent	SO ₂	Sulfur dioxide
H ₂ S	Hydrogen sulfide	SO _x	Sulfur oxides
HAP.....	Hazardous air pollutant listed pursuant to Section 112 of the Federal Clean Air Act	TAP	Toxic air pollutant pursuant to Chapter 173-460 WAC
HCl.....	Hydrochloric acid	TGOC.....	Total Gaseous Organic Carbon
Hg.....	Mercury	TOC.....	Total Organic Carbon
N ₂ O	Nitrous oxide	TSP.....	Total Suspended Particulate
NH ₃	Ammonia	VOC	Volatile organic compound
NO ₂	Nitrogen dioxide		
NO _x	Nitrogen oxides		
O ₂	Oxygen		

Terms not otherwise defined have the meaning assigned to them in the referenced regulations or the dictionary definition, as appropriate.

1. FACILITY IDENTIFICATION

Applicant Name: H B Fuller
Applicant Address: 417 NW 136th Street
Vancouver, Washington 98685
Facility Name: H B Fuller
Facility Address: 417 NW 136th Street
Vancouver, Washington 98685
SWCAA Identification: 146
Contact Person: Jeff Stalcup
Primary Process: Manufacture of hot melt coated adhesive strings and paper tapes
SIC/NAICS Code: 2891: Adhesives and Sealants
424690: Other Chemical and Allied Products Merchant
Wholesalers
Facility Latitude and Longitude: 45° 43' 8.872" N
122° 40' 24.009" W
Facility Classification: Natural Minor

2. FACILITY DESCRIPTION

H B Fuller manufactures hot melt coated adhesive strings and paper tapes. The strings and tapes are used for package reinforcement (cardboard, plywood veneer composing) and to allow easy opening of corrugated and folding cartons. The facility also does a small amount of plastic film coating. VOCs (including TAPs) and PM (primarily condensable organic particulate matter) are the primary pollutants emitted from these processes. A small amount of ozone may also be released from the corona treaters associated with Film Line 13 (was F-1), Sesame Tape Line 11 (was T-11) in the research and development area and Sesame Tape Line 12 (was T-12). Emissions are essentially fugitive in nature from the various pieces of machinery and are captured by strategically placed exhaust pick-ups and room vents. The vents exhaust through the roof of the buildings after passing through particulate filters and carbon adsorbers as appropriate.

3. CURRENT PERMITTING ACTION

This permitting action is in response to Air Discharge Permit (ADP) application number CL-3285 dated January 17, 2025. H B Fuller submitted ADP application CL-3285 requesting the following:

- Permit an existing rotary converting platform and Enercon Coronaflex corona treater on Line 17.
- Notice of Violation (NOV) 11343 was issued January 23, 2025, for the installation of the equipment prior to permitting.

ADP 25-3688 will supersede ADP 02-2432R5 in its entirety.

4. PROCESS DESCRIPTION

Hot melt is received in a solid pellet form and mixed into hot melt in three tanks. String and tape made up of multiple yarn fibers are dipped into hot melt on three string lines and twelve tape lines. The final product (hot-melt adhesive coated string and tape) is wound onto spools for sale to other manufacturing facilities.

5. EQUIPMENT/ACTIVITY IDENTIFICATION

- 5.a. Hot Melt Mixing Tanks (modified). Three hot melt mixing tanks are used to mix and melt various resins and dyes. Two tanks (installed in 1988) have a capacity of 3,600 pounds. One tank has a capacity of 6,000 pounds (installed approximately 1997). Each tank is equipped with a hatched cover. The hatch on each tank cover is large enough to allow materials to be added to the tank. A vent pickup is positioned at each hatch cover to capture fumes from each tank. The tank covers are closed when no material is being added to the tank. The vent pickups provide for almost total capture of fumes generated by the mixing tanks. The hot melt mixing operations are vented at a total of 5,000 cfm. Approximately 1/3 of the vent flow is drawn from above each tank.

(New) Line 17 produces “ZFold handles” and is equipped with an Enercon Coronaflex model LM5999-03-SR21-480 corona treatment system (serial number 183407-1-1) that is a source of ozone emissions. The corona treater has a 3-kW power supply and is typically operated at 0.4 for hand packing with Line 17 run speed at 30 fpm and 1.4 for robot operation with Line 17 running at 100 fpm. The ozone vapors are collected by a room ventilation system. The ventilation system exhausts through a set of particulate filters and a carbon adsorber in series as described below.

The ventilation system exhausts through three sets of particulate matter filters and a filter-shaped carbon adsorber in series. The first two sets of particulate matter filters each provide an estimated control efficiency of 40%. The last set of particulate matter filters provides an estimated control efficiency of 65%.

- 5.b. Tape Lines. Tape coating is spread among twelve different tape lines. The tape lines are designated Tape Lines 1-12 (1 through 12). Hot melt fumes emitted from tape lines 1-4, and 6-10 are captured in three separate ventilation systems, each rated at 10,000 cfm. Each of these ventilation system exhausts through two sets of particulate filters and a carbon adsorber in series. The first set of particulate matter filters provides an estimated control efficiency of 40%. The second set of particulate filters provides an estimated control efficiency of 65%. The machines in the creel area that feed the tape lines are considered part of the tape lines. Tape Line 5 is vented with the string lines exhaust. Tape Line 11 is in the Research and Development Area and vents through the Research and Development Area exhaust. Tape Line 12 is vented with the Line 13 room ventilation system.

Sesame Tape Line 12 is equipped with an Enercon LM5809-14 Bare Roll corona treatment system (serial number 127686-01) that emits approximately 0.007 lb/kW-hr of ozone. The corona treater has a 3-kW power supply and is typically operated at approximately 1 kW.

The applicant estimates that the maximum production rate for the Tape Line 4 will be 10,200 pounds per day of product and up to 3,723,000 pounds per year of product (8,760 hours per year of operation at maximum rate).

- 5.c. String Lines. String coating is spread among three string lines. The string lines are designated String Lines 14, 15, and 16. Hot melt fumes emitted from the string lines are captured by a single ventilation system rated at 10,000 cfm. The ventilation system exhausts through two sets of particulate filters and a carbon adsorber in series. The first set of particulate matter filters provides an estimated control efficiency of 40%. The second set of particulate filters provides an estimated control efficiency of 65%.
- 5.d. Line 13. Line 13 is equipped with an Enercon LM540-14 Bare Roll corona treatment system (serial number 116157-01) that is a source of ozone emissions. The corona treater has a 3-kW power supply and is typically operated at 1 kW. The ozone and hot melt vapors are collected by a room ventilation system rated at 5,000 cfm. The ventilation system exhausts through two sets of particulate filters and a carbon adsorber in series. The first set of particulate matter filters provides an estimated control efficiency of 40%. The second set of particulate filters provides an estimated control efficiency of 65%.
- 5.e. Research and Development Area. The Research and Development Area has been used for product development and includes Tape Line 11 equipped with an Enercon LM5809-14 Bare-Roll corona treater system (serial number 152172-1) used to treat polyethylene terephthalate film prior to the application of hot melt. The corona treater has a 2-kW power supply and is typically operated at 1 kW. Vapors and ozone from activities in the research and development area are collected by a room ventilation system rated at 5,000 cfm. The ventilation system exhausts through two sets of particulate filters and a carbon adsorber in series. The first set of particulate matter filters provides an estimated control efficiency of 40%. The second set of particulate filters provides an estimated control efficiency of 65%.
- 5.f. West-CHSO #2012179. This heater utilizes 0.5 MMBtu/hr natural gas fired Eclipse Model AH burners. It exhausts vertically out of the roof.
- 5.g. Process Area Comfort Heaters. A number of small natural gas combustion units are used to warm the process areas. The current heaters and their maximum heat capacities are listed below:

<u>Identification</u>	<u>Capacity (MMBtu/hr)</u>
Hot Melt Lab Heater Add-on	0.100
R &D Lab Unit for Addition	0.400

Tape Room Make-up Unit MAU-2	1.698
String Room Make-up Unit MAU-1	0.864
Winding Room A/C Unit GP-3	0.243
Creel Area A/C Unit GP-2	0.243
Warehouse Heating Unit MAU-4	0.648
Hot Melt Room Heating Unit MAU-3	0.864
T8-11 Heating Unit MAU-7	0.540
S11-15 Heating Unit MAU-5	0.290
R & D Heating Unit MAU-6	0.290
Winding Room A/C #2 GP-10	0.194

Heaters used in the office areas are not included in this grouping.

5.h. Other Equipment.

Lab Development Area. Laboratory work and bench-scale testing are performed in this area. Emissions are minimal and are collected by a room ventilation system rated at 1,710 cfm.

Pelletizing Room. The pelletizing room contains a Gala hot melt pelletizer (model TWS-80) and Gala pelletizer dryer. The hot melt pelletizer extrudes melted adhesive through a die, then cuts the extruded ends and cools them in a water bath. The cutting and cooling system is enclosed and emissions from this operation are negligible. Fines are collected in a basket in the pellet water tank. Pellets are dried with room air. The room air is exhausted at 9,900 cfm through two sets of particulate filters in series. The first set of particulate matter filters provides an estimated control efficiency of 40%. The second set of particulate filters provides an estimated control efficiency of 65%.

Descriptions of Particulate Filters and Carbon Adsorber Filters:

The following filters are currently utilized by H B Fuller.

Particulate Matter Pre- Filters

Make: Air Handler (Grainger)
 Model: 6B924
 Dimensions: 24" x 24" x 2" deep
 Efficiency: 40%

Particulate Matter Filters

Make: Air Handler (Grainger)
 Model: 5W921
 Dimensions: 24" x 24" x 12"
 Efficiency: 95%

Carbon Filters

Make: D Mark, Inc.
 Model: Odorguard II
 Dimensions: 24" x 24" x 2" deep

5.i. Equipment/Activity Summary.

ID No.	Equipment/Activity	Control Equipment/Measure
1	Three Hot Melt Mixing Tanks Line 17 (Corona Treater)	Filtration and carbon adsorption
2	Twelve Tape Lines Line 12 (Corona Treater)	Filtration and carbon adsorption
3	Three String Lines	Filtration and carbon adsorption
4	Line 13 (Corona Treater)	Filtration and carbon adsorption
5	Research and Development Area Line 11 (Corona Treater)	Filtration and carbon adsorption
6	West-CHSO #2012179 Heater	Low-sulfur fuel (natural gas)
7	Twelve Process Area Comfort Heaters	Low-sulfur fuel (natural gas)

6. EMISSIONS DETERMINATION

Unless otherwise specified by SWCAA, actual emissions must be determined using the specified input parameter listed for each emission unit and the following hierarchy of methodologies:

- (a) Continuous emissions monitoring system (CEMS) data;
- (b) Source emissions test data (EPA reference method). When source emissions test data conflicts with CEMS data for the time period of a source test, source test data must be used;
- (c) Source emissions test data (other test method); and
- (d) Emission factors or methodology provided in this TSD.

Nothing precludes the use, including the exclusive use of any credible evidence or information relevant to identifying or quantifying emissions if methods identified above, in the ADP, or elsewhere in this TSD have not provided adequate quantification of actual emissions.

- 6.a. Hot Melt Mixing Tanks, Tape Lines, String Lines, Line 13, Research and Development Area. Emissions from the coating operations and Research and Development Area were calculated using emission factors from the April 5-6, 2005, source test and the facility's projected maximum production of 25,000,000 pounds per year of hot melt and coated product.

<u>Pollutant</u>	Coating Emission Factor (lb/lb product)	Hot Melt Tanks Emission Factor (lb/lb hot melt)	Annual Emissions (lb/yr)	Emission Limit or SQER (lb/yr)
Acetaldehyde	8.58E-6	1.15E-6	243	1,150 (emission limit)
Acetone	2.07E-5	7.99E-6	716	43,748 (SQER)
2-Propanol (isopropanol)	5.225E-6	1.84E-6	177	43,748 (SQER)
m,p-Xylene	1.24E-5	2.87E-6	383	43,748 (SQER)
Total VOCs ¹	2.62E-5	5.86E-6	801	19,800 (emission limit)
Particulate Matter/PM ₁₀	4.48E-4	4.32E-5	13,080	29,000 (emission limit)

¹ Acetone is not considered a VOC and therefore has not been included in this total.

- 6.b. Ozone Adsorption Units. Uncontrolled ozone emissions have been estimated by Enercon to be a maximum of 0.073 pounds per kilowatt hour (lb/kW-hr) from each corona treater in use. Ozone emissions are estimated by multiplying the emission factor by the kW of the unit and the actual hours operated. Ozone adsorption units (carbon beds) can typically reach 90% control of ozone emissions.

This current ozone emission factor of 0.007 lb/kW-hr was developed by sampling the T-12 stack exhaust with a colorimetric detector tube on October 6, 2004. SWCAA estimated potential ozone emissions from the four corona treaters assuming 8,760 hours of operation per treater.

Line	kW	Hours run	kW-hr	Emission Factor (lb/kW-hr)	Emissions (lb/hr)	Emissions
Line 11	2	8,760	17,520	0.007	0.014	122.64
Line 12	3	8,760	26,280	0.007	0.021	183.96
Line 13	3	8,760	26,280	0.007	0.021	183.96
Line 17	3	8,760	26,280	0.007	0.021	183.96
Total	lb/yr					674.52
	tpy					0.34

- 6.c. West-CHSO #2012179. Potential emissions from the combustion of natural gas by the West-CHSO heater were calculated with the assumption that the heater could operate at full rated capacity for 8,760 hours per year.

West-CHSO #2012179 Heater						
Heat Rate =	0.500 MMBtu/hr					
Fuel Type =	Natural Gas					
Natural Gas Heat Value =	1,020 Btu/scf for AP-42 emission factors					
Natural Gas Heat Value =	1,026 Btu/scf for 40 CFR 98 GHG emission factors					
Fuel Consumption =	4.294 MMscf/yr					
Pollutant	Emission Factor			Emission Factor Source		
	lb/MMscf	lb/hr	tpy			
NO _x	99.1	0.049	0.21	manufacturer		
CO	82.9	0.041	0.18	manufacturer		
VOC	5.5	0.0027	0.012	AP-42 Sec. 1.4 (7/98)		
SO _x as SO ₂	0.6	0.00029	0.0013	AP-42 Sec. 1.4 (7/98)		
PM	7.6	0.0037	0.016	AP-42 Sec. 1.4 (7/98)		
PM ₁₀	7.6	0.0037	0.016	AP-42 Sec. 1.4 (7/98)		
PM _{2.5}	7.6	0.0037	0.016	AP-42 Sec. 1.4 (7/98)		
Benzene	0.0021	1.0E-06	4.5E-06	AP-42 Sec. 1.4 (7/98)		
Formaldehyde	0.075	3.7E-05	1.6E-04	AP-42 Sec. 1.4 (7/98)		
Greenhouse Gases			CO ₂ e	CO ₂ e		
	kg/MMBtu	GWP	lb/MMBtu	lb/MMscf	tpy, CO ₂ e	Emission Factor Source
CO ₂	53.06	1	116.98	120,019	256.2	40 CFR 98
CH ₄	0.001	25	0.055	56.55	0.1	40 CFR 98
N ₂ O	0.0001	298	0.066	67.41	0.1	40 CFR 98
Total GHG - CO ₂ e			117.098	120,143	256.4	

The manufacturer's emission factors are essentially equivalent to the AP-42 emission factors for carbon monoxide and nitrogen oxides of 84 lb/MMscf and 100 lb/MMscf respectively. For the purposes of calculating emissions in the future, the AP-42 factors will be used unless new factors are developed through source testing. Because natural gas use is only metered at one location for the entire facility, this will allow total emissions from all process-related fuel burning equipment (West-CHSO #2012179 and process area comfort heaters) to be calculated using the same emission factors.

6.d. Process Area Comfort Heaters. Potential emissions from the combustion of natural gas by the comfort heaters were calculated with the assumption that the heaters could operate at full rated capacity for 8,760 hours per year. However, limits were established previously that have reduced operation to below 8,760 and those have no been modified.

Comfort Heaters						
Heat Rate =	6.374 MMBtu/hr					
Fuel Type =	Natural Gas					
Natural Gas Heat Value =	1,020 Btu/scf for AP-42 emission factors					
Natural Gas Heat Value =	1,026 Btu/scf for 40 CFR 98 GHG emission factors					
Fuel Consumption =	54.741 MMscf/yr					
	Emission Factor					
Pollutant	lb/MMscf	lb/hr	tpy	Emission Factor Source		
NO _x	100.0	0.625	2.74	AP-42 Sec. 1.4 (7/98)		
CO	84.0	0.525	2.30	AP-42 Sec. 1.4 (7/98)		
VOC	5.5	0.0344	0.151	AP-42 Sec. 1.4 (7/98)		
SO _x as SO ₂	0.6	0.00375	0.0164	AP-42 Sec. 1.4 (7/98)		
PM	7.6	0.0475	0.208	AP-42 Sec. 1.4 (7/98)		
PM ₁₀	7.6	0.0475	0.208	AP-42 Sec. 1.4 (7/98)		
PM _{2.5}	7.6	0.0475	0.208	AP-42 Sec. 1.4 (7/98)		
Benzene	0.0021	1.3E-05	5.7E-05	AP-42 Sec. 1.4 (7/98)		
Formaldehyde	0.075	4.7E-04	2.1E-03	AP-42 Sec. 1.4 (7/98)		
Greenhouse Gases				CO ₂ e	CO ₂ e	
	kg/MMBtu	GWP	lb/MMBtu	lb/MMscf	tpy, CO ₂ e	Emission Factor Source
CO ₂	53.06	1	116.98	120,019	3,265.8	40 CFR 98
CH ₄	0.001	25	0.055	56.55	1.5	40 CFR 98
N ₂ O	0.0001	298	0.066	67.41	1.8	40 CFR 98
Total GHG - CO ₂ e			117.098	120,143	3,269.2	

Emissions must be calculated using the emission factors identified above unless new emission factors are provided by the manufacturer or developed through source testing and are approved by SWCAA.

- 6.e. Emissions Summary. The potential facility-wide annual emissions listed in the table below are the sum of the maximum emissions from each emission unit using the emission factors presented in this section (normal font), except where an ADP limit is established.

Air Pollutant	Potential to Emit (tpy)	Project Impact (tpy)
NO _x	0.50	--
CO	0.50	--
VOC	9.90	--
SO ₂	0.02	--
PM	14.5	--
PM ₁₀	14.5	--
PM _{2.5}	14.5	--
CO ₂ /CO _{2e}	3,525.6	--
O ₃	1.58	0.09
TAPs	1.22	--
HAPs	0.77	--

Toxic/Hazardous Air Pollutant	Potential to Emit (lb/yr)	Project Impact (lb/yr)
Acetaldehyde [75-07-0]	1,150	--
Acetone [67-64-1]	95	--
Benzene [71-43-2]	6.15E-05	--
Formaldehyde [50-00-0]	2.26E-03	--
2-Propanol (isopropanol)	40	--
m,p-Xylene	47	--

Potential toxic and hazardous air pollutant emissions were calculated by adding the permitted limit for acetaldehyde (1,150 pounds per year) to the maximum calculated quantities of other TAP and HAP emissions.

7. REGULATIONS AND EMISSION STANDARDS

Regulations have been established for the control of emissions of air pollutants to the ambient air. Regulations applicable to the proposed facility that have been used to evaluate the acceptability of the proposed facility and establish emission limits and control requirements include, but are not limited to, the following regulations, codes, or requirements. These items establish maximum emissions limits that could be allowed and are not to be exceeded for new or existing facilities. More stringent limits are established in this ADP consistent with implementation of Best Available Control Technology (BACT):

- 7.a. Title 40 Code of Federal Regulations (CFR) 60.740 et seq. (Subpart VVV) "Standards of Performance for Polymeric Coating of Supporting Substrates Facilities" establishes reporting requirements and maximum emission limits for substrate coating facilities. This regulation is applicable because this facility meets the definition of polymeric coating of substrates. Because this facility uses material containing less than 95 megagrams of VOC per 12-month period, the facility is only subject to the recordkeeping, reporting, and notification requirements of sections 60.744(b), 60.747(b), and 60.747(c). Increases in VOC content and material usage could change the applicable portions of this regulation if the total VOC content of material utilized at this facility becomes greater than 95 megagrams per year. If the formulation for hot melt changes significantly, EPA Method 24 may need to be conducted again to quantify the VOC content of the hot melt.
- 7.b. Revised Code of Washington (RCW) 70A.15.2040 empowers any activated air pollution control authority to prepare and develop a comprehensive plan or plans for the prevention, abatement and control of air pollution within its jurisdiction. An air pollution control authority may issue such orders as may be necessary to effectuate the purposes of the Washington Clean Air Act (RCW 70A.15) and enforce the same by all appropriate administrative and judicial proceedings subject to the rights of appeal as provided in Chapter 62, Laws of 1970 ex. sess. This law applies to the facility.
- 7.c. RCW 70A.15.2210 provides for the inclusion of conditions of operation as are reasonably necessary to assure the maintenance of compliance with the applicable ordinances, resolutions, rules and regulations when issuing an ADP for installation and establishment of an air contaminant source. This law applies to the facility.
- 7.d. WAC 173-460 "Controls for New Sources of Toxic Air Pollutants" requires BACT for toxic air pollutants (T-BACT), identification and quantification of emissions of toxic air pollutants, and demonstration of protection of human health and safety.
- The facility emits TAPs; therefore, this regulation applies to the facility.
- 7.e. WAC 173-476 "Ambient Air Quality Standards" establishes ambient air quality standards for PM₁₀, PM_{2.5}, lead, SO₂, NO_x, ozone, and CO in the ambient air, which must not be exceeded. The facility emits PM₁₀, PM_{2.5}, SO_x, NO_x, and CO; therefore, certain sections of this regulation apply. The facility does not emit lead; therefore, the lead regulation section does not apply.
- 7.f. SWCAA 400-040 "General Standards for Maximum Emissions" requires all new and existing sources and emission units to meet certain performance standards with respect to Reasonably Available Control Technology (RACT), visible emissions, fallout, fugitive emissions, odors, emissions detrimental to persons or property, SO₂, concealment and masking, and fugitive dust. This regulation applies to the facility.
- 7.g. SWCAA 400-040(1) "Visible Emissions" requires that emissions of an air contaminant from any emissions unit must not exceed twenty percent opacity for more than three

minutes in any one hour at the emission point, or within a reasonable distance of the emission point. This regulation applies to the facility.

- 7.h. SWCAA 400-040(2) "Fallout" requires that emissions of PM from any source must not be deposited beyond the property under direct control of the owner(s) or operator(s) of the source in sufficient quantity to interfere unreasonably with the use and enjoyment of the property upon which the material is deposited. This regulation applies to the facility.
- 7.i. SWCAA 400-040(3) "Fugitive Emissions" requires that reasonable precautions be taken to prevent the fugitive release of air contaminants to the atmosphere. This regulation applies to the facility.
- 7.j. SWCAA 400-040(4) "Odors" requires any source which generates odors that may unreasonably interfere with any other property owner's use and enjoyment of their property to use recognized good practice and procedures to reduce these odors to a reasonable minimum. This source must be managed properly to maintain compliance with this regulation. This regulation applies to the facility.
- 7.k. SWCAA 400-040(6) "Sulfur Dioxide" requires that no person is allowed to emit a gas containing in excess of 1,000 ppm of SO₂, corrected to 7% O₂ or 12% CO₂ as required by the applicable emission standard for combustion sources.

The facility emits SO₂; therefore, this regulation applies to the facility.

- 7.l. SWCAA 400-040(8) "Fugitive Dust Sources" requires that reasonable precautions be taken to prevent fugitive dust from becoming airborne and to minimize emissions. This regulation applies to the facility.
- 7.m. SWCAA 400-050 "Emission Standards for Combustion and Incineration Units" requires that all provisions of SWCAA 400-040 be met, and that no person is allowed to cause or permit the emission of PM from any combustion or incineration unit in excess of 0.23 g/Nm³_{dry} (0.1 gr/dscf) of exhaust gas at standard conditions.

The facility has combustion units; therefore, this regulation applies to the facility.

- 7.n. SWCAA 400-060 "Emission Standards for General Process Units" requires that all new and existing general process units do not emit PM in excess of 0.23 g/Nm³_{dry} (0.1 gr/dscf) of exhaust gas. The facility has general process units; therefore, this regulation applies to the facility.
- 7.o. SWCAA 400-109 "Air Discharge Permit Applications" requires that an ADP application be submitted for all new installations, modifications, changes, or alterations to process and emission control equipment consistent with the definition of "new source". Sources wishing to modify existing permit terms may submit an ADP application to request such changes. An ADP must be issued, or written confirmation of exempt status must be received, before beginning any actual construction, or implementing any other

modification, change, or alteration of existing equipment, processes, or permits. This regulation applies to the facility.

- 7.p. SWCAA 400-110 "New Source Review" requires that SWCAA issue an ADP in response to an ADP application prior to establishment of the new source, emission unit, or modification. The new units meet the definition of a new source; therefore, this regulation applies to the facility.
- 7.q. SWCAA 400-111 "Requirements for Sources in a Maintenance Plan Area" requires that no approval to construct or alter an air contaminant source will be granted unless it is evidenced that:
- (1) The equipment or technology is designed and will be installed to operate without causing a violation of the applicable emission standards;
 - (2) Emissions will be minimized to the extent that the new source will not exceed emission levels or other requirements provided in the maintenance plan;
 - (3) BACT will be employed for all air contaminants to be emitted by the proposed equipment;
 - (4) The proposed equipment will not cause any ambient air quality standard to be exceeded; and
 - (5) If the proposed equipment or facility will emit any toxic air pollutant regulated under WAC 173-460, the proposed equipment and control measures will meet all the requirements of that Chapter.

The facility is located in a maintenance plan area; therefore, this regulation applies to the facility.

8. RACT/BACT/BART/LAER/PSD/CAM DETERMINATIONS

The proposed equipment and control systems incorporate BACT for the types and amounts of air contaminants emitted by the processes as described below:

New BACT Determination(s)

- 8.a. BACT Determination – Corona Treaters. Ozone is created during corona treatment. Ozone can be controlled with the use of an "ozone destruct unit", carbon adsorption, or similar device. SWCAA considers the installation of an ozone adsorption unit that meets at least 90% destruction efficiency to be BACT for the proposed corona treater.

Previous BACT Determination(s)

- 8.b. BACT Determination for T-4. The facility-wide TAP, VOC, and PM emission limits were not increased as a result of this permitting action. For past permitting actions SWCAA has concluded that the currently installed particulate matter filters and carbon adsorbers meet the requirements of BACT for the control of particulate matter and volatile organic compounds at the emission levels indicated by the ADP limits. SWCAA is not aware of any circumstances or advances in air pollution control technology that would cause SWCAA to come to a new conclusion today. Therefore, SWCAA has concluded that the current system of particulate matter filters and carbon adsorbers meets the requirements of

BACT for the type and amount of TAP, VOC and PM emissions from T-4. Increasing the permitted emission limits for this facility will require a new review of BACT.

- 8.c. Prevention of Significant Deterioration (PSD) Applicability Determination. This permitting action will not result in a potential increase in emissions equal to or greater than the PSD thresholds. Therefore, PSD review is not applicable to this action.
- 8.d. Compliance Assurance Monitoring (CAM) Applicability Determination. CAM is not applicable to any emission unit at this facility because it is not a major source and is not required to obtain a Part 70 (Title V) permit.

9. AMBIENT IMPACT ANALYSIS

- 9.a. Criteria Air Pollutant Review. Emissions of NO_x, CO, PM, VOC (as a precursor to O₃), and SO₂ are emitted at levels where no adverse ambient air quality impact is anticipated.
- 9.b. Toxic Air Pollutant Review. The new equipment and modifications proposed in ADP application CL-3285 will not affect the type or quantity of TAP emissions from the facility. Approved BACT measures at the facility will limit emissions of Class A and B toxic air pollutants to below the applicable Small Quantity Emission Rates (SQER) or Acceptable Source Impact Level (ASILs) specified in WAC 173-460.

Conclusions

- 9.c. The new corona treater, as proposed in ADP application CL-3285, will not cause the ambient air quality requirements of 40 CFR 50 "National Primary and Secondary Ambient Air Quality Standards" to be violated.
- 9.d. The new corona treater, as proposed in ADP application CL-3285, will not cause the requirements of WAC 173-460 "Controls for New Sources of Toxic Air Pollutants" or WAC 173-476 "Ambient Air Quality Standards" to be violated.
- 9.e. The new corona treater as proposed in ADP application CL-3285, will not violate emission standards for sources as established under SWCAA General Regulations Sections 400-040 "General Standards for Maximum Emissions," 400-050 "Emission Standards for Combustion and Incineration Units," and 400-060 "Emission Standards for General Process Units."

10. DISCUSSION OF APPROVAL CONDITIONS

SWCAA has made a determination to issue ADP 25-3688 in response to ADP application CL-3285. ADP 25-3688 contains approval requirements deemed necessary to assure compliance with applicable regulations and emission standards as discussed below.

- 10.a. Supersession of Previous Permits. ADP 25-3688 supersedes ADP 02-2432R5 in its entirety. Compliance will be determined under this ADP, not previously superseded

ADPs. Existing approval conditions for units not affected by this project have been carried forward unchanged.

- 10.b. Emission Limits. Facility-wide emission limits are based on the sum of the emission limits for approved equipment calculated in Section 6 of this TSD.

Emission limits from natural gas combustion from space heating were not based on 8,760 hours of operation. Those limits have been carried forward.

Visible emissions from the corona treater have been limited to zero percent opacity, consistent with proper operation.

- 10.c. Operational Limits and Requirements. The ADP requires that each filter system be inspected at least quarterly and that filters be replaced as necessary. Depending upon usage, some filter systems may need more frequent inspections. In a past permitting action this inspection frequency replaced a mixed inspection frequency in ADP 00-2324 in which most filter maintenance was on an "as-needed" frequency. The newer requirement should be easier to comply with and more easily enforced.

The process-related exhaust stacks must be oriented vertically and exhausted above the level of the building roof. ADP 02-2432R4 applied this condition only to the West-CHSO #2012179 exhaust stack. This requirement was expanded in ADP 02-2432R5 to be consistent with SWCAA 400-200(1) and good air pollution control practice. All of the exhaust stacks currently comply with this condition.

- 10.d. Monitoring and Recordkeeping Requirements. ADP 25-3688 establishes monitoring and recordkeeping requirements sufficient to document compliance with applicable emission limits, ensure proper operation of approved equipment and provide for compliance with generally applicable requirements. No monitoring and recordkeeping requirements were modified in this permitting action.

- 10.e. Reporting Requirements. ADP 25-3688 establishes general reporting requirements for annual air emissions, upset conditions, and excess emissions. The ADP requires reporting of the annual air emissions inventory and reporting of the data necessary to develop the inventory.

The ozone emission factor is expressed in terms of lb/kW-hr so the ADP requires reporting of the kW-hrs of operation rather than simply hours of operation. If the power setting of the corona treater is not monitored, the maximum power setting for the material being produced will be assumed.

11. START-UP AND SHUTDOWN/ALTERNATIVE OPERATING SCENARIOS/POLLUTION PREVENTION

- 11.a. Start-up and Shutdown Provisions. Pursuant to SWCAA 400-081 "Start-up and Shutdown", technology-based emission standards and control technology determinations

must take into consideration the physical and operational ability of a source to comply with the applicable standards during start-up or shutdown. Where it is determined that a source is not capable of achieving continuous compliance with an emission standard during start-up or shutdown, SWCAA will include appropriate emission limitations, operating parameters, or other criteria to regulate performance of the source during start-up or shutdown.

To SWCAA's knowledge, this facility can comply with all applicable standards during start-up and shutdown.

- 11.b. Alternate Operating Scenarios. SWCAA conducted a review of alternate operating scenarios applicable to equipment affected by this permitting action.

The permittee has indicated that minor changes to raw materials or processes may occur, therefore the nature of the pollutants emitted from the facility may change. To accommodate this, a requirement was added that requires the permittee to notify SWCAA before processing any new material or implementing a change in the method of operation. If the change will result in an increase in emissions of VOCs or TAPs in excess of an SQER or an ADP limit, then New Source Review is required prior to making the change. SWCAA believes this provides the greatest flexibility while assuring no new TAP emissions will cause an incremental increase in ambient concentrations greater than the ASIL identified in WAC 173-460.

- 11.c. Pollution Prevention Measures. SWCAA conducted a review of possible pollution prevention measures for the facility. No pollution prevention measures were identified by either the permittee or SWCAA separate or in addition to those measures required under BACT considerations. Therefore, none were included in the approval conditions.

12. EMISSION MONITORING AND TESTING

Emission testing requirements have been established in Appendix A of the ADP. Emission testing requirements have not been modified due to this permitting action.

13. FACILITY HISTORY

- 13.a Permitting History. The following permits have been issued for this facility:

<u>Permit Number</u>	<u>Application #</u>	<u>Date Issued</u>	<u>Description</u>
02-2443R5	CL-1840	8-6/08	Rebuild of tape coating line (T-4)
02-2443R4	CL-1733	3-3-06	Installation of Sesame tape coating line (T-20), removal of string line S-9
02-2443R3	CL-1664	11-23-04	Installation of new tape coating line (T-12)
02-2443R2	CL-1652	5-25-04	Installation of new tape coating line (T-5)
02-2432R1	CL-1640	3-11-04	Installation of new tape coating line

<u>Permit Number</u>	<u>Application #</u>	<u>Date Issued</u>	<u>Description</u>
02-2432	CL-1567	11-13-02	Installation of proprietary equipment identified as West-CHSO #2012179
00-2324	CL-1416, CL-1479	1-29-00	Replacement of tape making machine, replacement of string line with film line, new control equipment, and increase in emission limits to accommodate increase in throughput to 25,000,000 lb/yr
99-2181	CL-1390	3-1-99	Addition of corona treating system in Research and Development Area
96-1890	CL-1089	7-30-96	Addition of coating lines and hot melt mixing tank
89-1059	CL-713	3-2-89	Relocation and expansion of existing facilities
87-883	CL-585	4-17-87	Expansion of existing facility
83-694	CL-492	6-23-83	Installation of new facility

Approvals in bold have been superseded or are no longer active with issuance of ADP 25-3688.

14. PUBLIC INVOLVEMENT OPPORTUNITY

- 14.a. Public Notice for ADP Application CL-3285. Public notice for ADP application CL-3285 was published on the SWCAA website for a minimum of fifteen (15) days beginning on January 17, 2025.
- 14.b. Public/Applicant Comment for ADP Application CL-3285. SWCAA did not receive specific comments, a comment period request, or any other inquiry from the public or the applicant regarding ADP application CL-3285. Therefore, no public comment period was provided for this permitting action.
- 14.c. State Environmental Policy Act. After review of the SEPA Checklist for this project, SWCAA has determined that the project does not have a probable significant impact on the environment and has issued Determination of Non-Significance 25-010. An Environmental Impact Statement is not required under RCW 43.21C.030(2)(c).