TECHNICAL SUPPORT DOCUMENT

Air Discharge Permit SWCAA 21-3451
ADP Application CL-3135

Pac Paper, LLC
SWCAA ID: 1560

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Abbreviations

ADP	Air Discharge Permit
AP-42	Compilation of Emission Factors, AP-42, Fifth Edition, Volume 1, Stationary Point and Area Sources – published by the US Environmental Protection Agency
ASIL	Acceptable Source Impact Level from WAC 173-460
BACT	Best Available Control Technology
BART	Best Available Retrofit Technology
Btu	British thermal unit
Btu/hr	British thermal units per hour
Btu/scf	British thermal units per standard cubic foot
CAM	Compliance Assurance Monitoring (40 CFR 64)
CAS #	Chemical Abstract Service number
CFR	Code of Federal Regulations
CO	Carbon monoxide
EPA	U.S. Environmental Protection Agency
HAP	Hazardous Air Pollutant listed pursuant to Section 112 of the Federal Clean Air Act
LAER	Lowest Achievable Emission Rate
lb/yr	Pounds per year
lbs	Pounds
MMBtu/hr	Million British thermal units per hour
MMscf/yr	Millions of standard cubic feet per year
NO_X	Nitrogen oxides
PM	Total particulate matter (includes both filterable particulate matter measured by EPA Method 5 and condensable particulate matter measured by EPA Method 202)
PM_{10}	Particulate matter with an aerodynamic diameter less than or equal to 10 micrometers (includes both filterable particulate matter measured by EPA Method 201 or 201A and condensable particulate matter measured by EPA Method 202)
$PM_{2.5}$	Particulate matter with an aerodynamic diameter less than or equal to 2.5 micrometers (includes both filterable particulate matter measured by EPA Method 201 or 201A and condensable particulate matter measured by EPA Method 202)
PSD	Prevention of Significant Deterioration
RACT	Reasonably Available Control Technology
RCW	Revised Code of Washington
SQER	Small Quantity Emission Rate listed in WAC 173-460
SO_2	Sulfur dioxide
SWCAA	Southwest Clean Air Agency
TAP	Toxic Air Pollutant pursuant to Chapter 173-460 WAC
T-BACT	Best Available Control Technology for toxic air pollutants
tpy	Tons per year
VOC	Volatile Organic Compound
WAC	Washington Administrative Code

1. FACILITY IDENTIFICATION

Applicant Name: Pac Paper, LLC
Applicant Address: 6416 NW Whitney Road, Vancouver, Washington 98665

Facility Name: Pac Paper, LLC
Facility Address: 6416 NW Whitney Road, Vancouver, Washington 98665
SWCAA Identification: 1560
Contact person: Mr. Robert Baker, Plant Manager

Primary Process: Paper converting and printing onto paper products
SIC / NAICS: 2679 / 322299
Facility Classifications: BACT / natural minor

2. FACILITY DESCRIPTION

Pac Paper, LLC (Pac Paper) processes paper (rewinding, slitting, sheeting, embossing, etc.) and prints onto paper products.

3. CURRENT PERMITTING ACTION

Pac Paper submitted Air Discharge Permit application (ADP application) CL-3135 on July 14, 2020, for the installation of two new Weber bag making production lines (603 and 604) to its current operation. The lines will include flat handle units, a bundler, and inline printers. Additional information submitted January 12, 2021, included information for an additional two Garant bag machines (605 and 606) with 4-color printers.

Also, the natural gas combustion equipment was re-permitted to operate 8,760 hours per year. The previous limits were based on reduced operation. Safety Data Sheet information was updated for existing products.

ADP 18-3310 will be superseded by this ADP in its entirety.

4. PROCESS DESCRIPTION

Pac Paper manufactures coffee sleeves, counter rolls, industrial rolls, industrial sheets, shopper bags, and food wrap. Some of these products are only cut and resized and no emissions are created during their manufacture.

The coffee sleeves are produced using kraft liner board. They are normally printed as they are run through one of the folder gluers, although a small portion of production (jobs requiring more than 2 colors) consists of preprinting rolls on a flexographic printing press.

The counter rolls (e.g. freezer paper or butcher paper) are often already printed. Pac Paper simply slits these 72" rolls into smaller rolls (e.g. 18-36" rolls) and winds them to a 7-10" diameter using a small rewinder.

The industrial sheets (e.g. pallet sheets) are produced on the sheeters. Some are cut into smaller sizes by the trimmer. No printing is involved.

The food wrap (e.g. paper that lines a hamburger basket, pizza liners) is made from grease-resistant sheets. The facility prints on the paper using the sleeter, which also slits the roll into several lanes of 10-12" width which are further cut into squares. The pizza liners are embossed and cut into squares on the embosser.

Pear wrap (food wrap) is produced on equipment (installed in 2017) in a separate room maintained at a humidity of 45%. The paper is prepared by applying a mineral oil and paraffin wax or a mineral oil and ethoxyquin mixture. The pear wrap goes through a high-speed printer using water-based ink on a thin tissue of paper. The paper is rewound and moved to the new sheeter where it is cut into squares.

The new Grocery Bags are made on two bag machines (Line 603 and 604), each with a flat paper handle unit and an inline printer. The bag machines produce folded flat paper handles and attach these handles to the bag after bag formation. Each has an inline flexographic printer.

The new Shopper Bags are made on two bag machines (Lines 605 and 606), medium and large, each with a twisted cord (twine-fed) handle unit and an inline four-color printer.

5. EQUIPMENT/ACTIVITY IDENTIFICATION

5.a #1 Fruit Press. The #1 Fruit Press is also known as the #1 Sleeter. Soy-based ink or water-based ink is used for printing. No heaters are involved in the printing process for curing or drying. Specific press information is detailed below:

Make:	Strachan Henshaw
Model:	Custom
Serial Number:	4307/1
Roll Width:	30 inches to 66 inches
Roll Diameter:	30 inches to 40 inches
Throughput Rating:	450 feet per minute
Basis Weight:	11 pounds to 50 pounds
Number of Ribbons:	1 or 2
Border Weight at Cutoff:	48 pounds to 300 pounds
Ventilation:	Emissions ventilated to ambient air through wall fans on building

5.b #2 Fruit Press. The #2 Fruit Press is also known as the #2 Sleeter. Soy-based ink or water-based ink is used for printing. No heaters are involved in the printing process for curing or drying. Specific press information is detailed below:

Make:	Strachan Henshaw
Model:	Custom
Serial Number:	4380/1
Roll Width:	30 inches to 66 inches
Roll Diameter:	30 inches to 40 inches
Throughput Rating:	450 feet per minute
Basis Weight:	11 pounds to 50 pounds
Number of Ribbons:	1 or 2
Border Weight at Cutoff:	48 pounds to 300 pounds
Ventilation:	Emissions ventilated to ambient air through wall fans on building

5.c #3 Fruit Press. The #3 Fruit Press is also known as the #3 Sleeter. Soy-based ink or water-based ink is used for printing. No heaters are involved in the printing process for curing or drying. Specific press information is detailed below:

Make:	Strachan Henshaw
Model:	Custom
Serial Number:	4380/2

Roll Width:	30 inches to 66 inches
Roll Diameter:	30 inches to 40 inches
Throughput Rating:	450 feet per minute
Basis Weight:	11 pounds to 50 pounds
Number of Ribbons:	1 or 2
Border Weight at Cutoff:	48 pounds to 300 pounds
Ventilation:	Emissions ventilated to ambient air through wall fans on building

5.d Wolverine Press. The Wolverine press is a flexographic 3-color printing press and was installed November 2001. Water-based ink is used for printing. No heaters are involved in the printing process for curing or drying. Specific press information is detailed below:

Make:	Wolverine Flexographic Manufacturing Company
Model:	Hydroline Flexographic Printing Press
Serial Number:	HLRE-768
Roll Width:	30 inches to 60 inches
Roll Diameter:	30 inches to 60 inches
Throughput Rating:	400 feet per minute
Basis Weight:	15 pounds to 90 pounds
Number of Ribbons:	1
Ventilation:	Emissions ventilated to ambient air through wall fans on building

5.e Hudson Sharp Press. The Hudson Sharp press is a flexographic 4-color printing press. Water-based ink is used for printing. A single 1.0 MMBtu/hr natural gas dryer is used to dry coatings that are applied by the press. Specific press information is detailed below:

Make:	Hudson Sharp
Model:	A7
Serial Number:	3088
Roll Width:	48 inches
Roll Diameter:	58 inches
Throughput Rating:	400 feet per minute
Ventilation:	Emissions ventilated to ambient air through ceiling duct
Dryer Burner Make:	Maxon
Dryer Burner Rating:	1.0 MMBtu/hr

5.f Pear Wrap Coating Station. One Faustell coating station (with a Lenox sheeter) that consists of a printer, coater, and a separate sleeter. Additional manufacturer's information is not available. The paper is printed with "Pear Blue" ink or comes pre-printed. One of two coatings is rolled onto the food wrap depending on pear type: a mineral oil/paraffin wax or mineral oil/ethoxyquin. The coatings are kept in four Metler-Toledo tanks, one of which (the wax tank) is heated by an electric water heater. The mineral oil and wax are kept at approximately 150 °F and the ethoxyquin at 68 °F (ambient temperature). Emissions from the tanks are negligible.

Paraffin wax fume (CAS# 8002-74-2, SQER 175lbs) has a flashpoint of 390 °F and a melting point of 115 °F. The material is not sprayed. Emissions of paraffin wax fume are assumed to be negligible.

The area has two roof vents each with an 8" diameter, 5' above roof line exhausting at 1,900 cfm.

5.g Shopper Bag Making Machines. Two Newlong Industrial model 127T+H606 bag making machines capable of producing bags with dimensional ranges of 9.5-19.5 inches in length, 7-14 inches in width, and 2.75-8.25 inches in bottom width. Each machine has a maximum output of 140 bags per minute and is able to cut, glue, fold, and make the bag handles.

Each bag making machine has an inline flexographic printing press with four print stations. Specific printing press information is detailed below.

Make:	Holweg Weber
Model:	IF-526
Serial Number:	IF-4/4-2522-20261 & IF-4/4-2523-20262
Max Width:	43.3 inches
Throughput Rating:	400 feet per minute
Ventilation:	Emissions ventilated to ambient air through ceiling duct
Dryers:	Electric
Ventilation:	Emissions ventilated to ambient air through wall fans on building

5.h Folder Gluer 1 and 2. Folder Gluers 1 and 2 produce coffee sleeves. They have the following inline printers.

Specific printer information is detailed below for the inline printer for Folder Gluer 1.

Make:	Wolverine
Model:	Cub 2-color CPN-Standard
Serial Number:	CP-308
Max Width:	30 inches
Throughput Rating:	310 feet per minute
Ventilation:	Emissions ventilated to ambient air through wall fans on building

Specific printer information is detailed below for the inline printer for Folder Gluer 2.

Make:	Wolverine
Model:	Cub 2-color CPN-Standard
Serial Number:	CPN-2660
Max Width:	30 inches
Throughput Rating:	310 feet per minute
Ventilation:	Emissions ventilated to ambient air through wall fans on building

5.i Grocery Bag Making Machines Lines 603 and 604 (*new*). Two new single size grocery bag machines. Each machine c produce folded flat paper handles and glue these handles to the bag after bag formation. The paper is sent through the printer, and the ink is dried with an electric dryer. Soy-based ink or water-based ink is used for printing. Then the bag is formed and the handle is made and attached using an adhesive. The bags are bundled in the bundler and the bundle is wrapped, using a small amount of hot glue to close the wrap.

Specific information is detailed below for the Bag Making Machine 603.

Make:	H.G. Weber
Model:	833A
Serial Number:	not built yet
Throughput Rating:	400 bags per minute
Ventilation:	Emissions ventilated to ambient air through wall fans on building

Specific printer information is detailed below for the inline printer for Bag Making Machine 603.

Make:	Holweg Weber
Model:	IF-526
Serial Number:	not built yet

Max Width:	43.3 inches
Print Stations:	4 with double blade assemblies
Throughput Rating:	980 feet per minute
Ventilation:	Emissions ventilated to ambient air through wall fans on building

The flexographic printer has electrically heated dryers following each ink application roller.

Specific information is detailed below for the Bag Making Machine 604.

Make:	H.G. Weber
Model:	833A
Serial Number:	not built yet
Throughput Rating:	400 bags per minute
Ventilation:	Emissions ventilated to ambient air through wall fans on building

Specific printer information is detailed below for the inline printer for Bag Making Machine 604.

Make:	Holweg Weber
Model:	IF-526
Serial Number:	not built yet
Max Width:	43.3 inches
Print Stations:	4 with double blade assemblies
Throughput Rating:	980 feet per minute
Ventilation:	Emissions ventilated to ambient air through wall fans on building

The flexographic printer has electrically heated dryers following each ink application roller.

5.j Garant Shopper Bag Making Machines Lines 605 and 606 (*new*). Two new single size bag machines, medium and large. Each machine is able to produce twisted cord handles and glue these handles to the bag after bag formation. The paper is sent through the printer, and the ink is dried with an electric dryer. Soy-based ink or water-based ink is used for printing. Then the bag is formed and the handle is made and attached using an adhesive. The bags are bundled in the bundler and the bundle is wrapped, using a small amount of hot glue to close the wrap.

Specific information is detailed below for Shopper Bag Machine 605 (Medium).

Make:	Garant Triumph
Model:	2T8 SK
Serial Number:	not built yet
Throughput Rating:	250 bags per minute
Ventilation:	Emissions ventilated to ambient air through wall fans on building

Specific printer information is detailed below for the inline printer for Shopper Bag Making Machine 605.

Make:	Garant Mashinen
Model:	Linaflex NL 04-900
Serial Number:	not built yet
Max Width:	35.4 inches
Print Stations:	4
Ventilation:	Emissions ventilated to ambient air through wall fans on building

The flexographic printer has electrically heated dryers following each ink application roller.

Specific information is detailed below for the Shopper Bag Machine 606 (Large).

Make:	Garant Triumph
Model:	5-F6/SK
Serial Number:	not built yet
Throughput Rating:	200 bags per minute
Ventilation:	Emissions ventilated to ambient air through wall fans on building

Specific printer information is detailed below for the inline printer for Shopper Bag Making Machine 606.

Make:	Garant Mashinen
Model:	Linaflex NL 04-1400
Serial Number:	not built yet
Max Width:	55 inches
Print Stations:	4
Ventilation:	Emissions ventilated to ambient air through wall fans on building

The flexographic printer has electrically heated dryers following each ink application roller.

5.k Space Heaters. 17 natural-gas fired Reznor ITT model XL-200-3, each rated at 200,000 Btu/hr are used to heat the printing and warehouse area.

5.l Other Equipment.

Three sheeters	One trimmer
One embosser	Three large rewinders
Two small rewinders	

5.m Summary.

ID No.	Equipment/Activity	Control Equipment / Measure
1	#1 Fruit Press (Strachan Henshaw SN 4307/1)	Low-VOC Ink
2	#2 Fruit Press (Strachan Henshaw SN 4380/1)	Low-VOC Ink
3	#3 Fruit Press (Strachan Henshaw SN 4380/2)	Low-VOC Ink
4	Wolverine Press (SN HLRE-768)	Low-VOC Ink
5	Hudson Sharpe Press (SN 3088) with Maxon Dryer	Low-VOC Ink, Low Sulfur Fuel (natural gas)
6	Pear Wrap Press/Coater (Faustell)	Low-VOC Ink
7	Two Shopper Bag Making Machines (Newlong)	Low-VOC Ink
8	Two Folder Gluers (Wolverine Cub)	Low-VOC Ink
9	Two Grocery Bag Making Machines (Weber) with presses / Lines 603 and 604	Low-VOC Ink
10	Two Shopper Bag Making Machines (Garant) with presses / Lines 605 and 606	Low-VOC Ink
11	Seventeen Space Heaters (3.4 MMBtu/hr total)	Low Sulfur Fuel (natural gas)

6. EMISSIONS DETERMINATION

6.a Printing and Gluing Operations (*modified*). VOC, TAP, and HAP emissions from printing and gluing operations are calculated using Safety Data Sheet (SDS) information for individual inks and glues, estimated material consumption, and a material balance methodology. It was assumed that 100 percent of the volatile material from the ink, glues, and printing products are emitted to the ambient air. Wherever SDS information indicated a range of potential pollutant concentrations for a material, the average concentration was used to calculate annual emissions. Emissions of particulate matter were assumed to be zero because there are no spraying activities. Solvents (such as ethyl acetate) may be used to clean the press plates.

The soy-based ink VOC content has been updated. Current SDS show an average VOC content of 0.30 percent.

Clarification from Henkel Corporation confirmed the acetaldehyde emissions from the Aquence BG 096A glue are 0.005 percent.

Blended Waxes, Inc. said paraffin wax fume from the use of paraffin wax is 0 percent as long as the wax is not heated to above 300 °F.

Pollutant	Emissions
VOC	6.03 tpy
TAP	3.59 tpy
HAP	0.18 tpy

Though the facility currently does not use previously-reviewed or approved inks/solvents that contain higher VOCs, they have requested to maintain the VOC limit for printing and adhesion operations of 11.50 tpy in case they ever need to switch back to those inks/solvents.

6.b Hudson Press Maxon Burner. Potential annual emissions from the combustion of natural gas in the Hudson Press Maxon burner were calculated with the assumption that the equipment will operate at full rated capacity for 8,760 hours per year. Emissions of NO_X, CO, VOC, SO_2, $PM/PM_{10}/PM_{2.5}$, formaldehyde, and benzene were calculated using emission factors from AP-42 Section 1.4 (7/98). Greenhouse gas emissions were calculated using the procedures specified in 40 CFR 98. All PM is assumed to be $PM_{10}/PM_{2.5}$.

Hudson Press Maxon Burner

Heat Rate = 1.000 MMBtu/hr
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 = 8.588 MMscf/yr

Pollutant	Emission Factor lb/MMscf	Emission Factor lb/MMBtu	Emissions lb/hr	Emissions tpy	Emission Factor Source
NO_X	100	0.0980	0.10	0.43	AP-42 Sec. 1.4 (7/98)
CO	84	0.0824	0.08	0.36	AP-42 Sec. 1.4 (7/98)
VOC	5.5	0.0054	0.01	0.02	AP-42 Sec. 1.4 (7/98)
SO_X as SO_2	0.6	0.0006	5.88E-04	0.00	AP-42 Sec. 1.4 (7/98)
PM	7.6	0.0075	0.01	0.03	AP-42 Sec. 1.4 (7/98)
PM_{10}	7.6	0.0075	0.01	0.03	AP-42 Sec. 1.4 (7/98)
$PM_{2.5}$	7.6	0.0075	0.01	0.03	AP-42 Sec. 1.4 (7/98)
Benzene	0.0021	2.06E-06	2.06E-06	9.02E-06	AP-42 Sec. 1.4 (7/98)
Formaldehyde	0.075	7.35E-05	7.35E-05	3.22E-04	AP-42 Sec. 1.4 (7/98)

Greenhouse Gases	kg/MMBtu	GWP	CO_2e lb/MMBtu	CO_2e lb/MMscf	tpy, CO_2e	Emission Factor Source
CO_2	53.06	1	116.98	120,019	512.4	40 CFR 98
CH_4	0.001	25	0.055	56.55	0.2	40 CFR 98
N_2O	0.0001	298	0.066	67.41	0.3	40 CFR 98
Total GHG - CO_2e			117.098	120,143	512.9	

6.c Space Heaters. Potential annual emissions from the combustion of natural gas in the Reznor space heaters were calculated with the assumption that the equipment will operate at full rated capacity for 8,760 hours per year. Emissions of NO_X, CO, VOC, SO_2, PM/PM_{10}/$PM_{2.5}$, formaldehyde, and benzene were calculated using emission factors from AP-42 Section 1.4 (7/98). Greenhouse gas emissions were calculated using the procedures specified in 40 CFR 98. All PM is assumed to be PM_{10}/$PM_{2.5}$.

Reznor Space Heaters

Heat Rate =	3.400	MMBtu/hr (combined)
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 =	29.200	MMscf/yr

Pollutant	Emission Factor lb/MMscf	Emission Factor lb/MMBtu	Emissions lb/hr	Emissions tpy	Emission Factor Source
NO_X	100	0.0980	0.33	1.46	AP-42 Sec. 1.4 (7/98)
CO	84	0.0824	0.28	1.23	AP-42 Sec. 1.4 (7/98)
VOC	5.5	0.0054	0.02	0.08	AP-42 Sec. 1.4 (7/98)
SO_X as SO_2	0.6	0.0006	2.00E-03	0.01	AP-42 Sec. 1.4 (7/98)
PM	7.6	0.0075	0.03	0.11	AP-42 Sec. 1.4 (7/98)
PM_{10}	7.6	0.0075	0.03	0.11	AP-42 Sec. 1.4 (7/98)
$PM_{2.5}$	7.6	0.0075	0.03	0.11	AP-42 Sec. 1.4 (7/98)
Benzene	0.0021	2.06E-06	7.00E-06	3.07E-05	AP-42 Sec. 1.4 (7/98)
Formaldehyde	0.075	7.35E-05	2.50E-04	1.10E-03	AP-42 Sec. 1.4 (7/98)

Greenhouse Gases	kg/MMBtu	GWP	CO_2e lb/MMBtu	CO_2e lb/MMscf	tpy, CO_2e	Emission Factor Source
CO_2	53.06	1	116.98	120,019	1,742.0	40 CFR 98
CH_4	0.001	25	0.055	56.55	0.8	40 CFR 98
N_2O	0.0001	298	0.066	67.41	1.0	40 CFR 98
Total GHG - CO_2e			117.098	120,143	1,743.8	

6.d Facility-wide Potential Emissions Summary. Emissions below represent the potential to emit of the facility or an established ADP limit if that is different from the potential to emit.

Pollutant	**Potential Annual Emissions (tpy)**
Nitrogen oxides	1.89
Carbon monoxide	1.59
Volatile organic compounds	11.60
Sulfur oxides as Sulfur dioxide	0.01
Particulate matter	0.14
PM_{10}	0.14
$PM_{2.5}$	0.14
Toxic Air Pollutants	3.59
Hazardous Air Pollutants	0.18

Pollutant	**CAS #**	**TAP Class**	**HAP (Yes/No)**	**Emissions (lb/yr)**	**WAC 173-460 SQER (lb/yr)**
Acetaldehyde	75-07-0	A	Yes	5	50
Acrylic Acid	79-10-7	B	Yes	48	175
Ammonia	7664-41-7	B	No	108	17,500
Diethylene Glycol Monoethyl Ether	111-90-0	B	Yes	98	NA
Dipropylene Glycol Methyl Ether	34590-94-8	B	Yes	49	43,748
Ethylene Glycol	107-21-1	B	Yes	5	43,748

Ethylene Glycol Mono-n-Butyl Ether	111-76-2	B	Yes	600	43,748
Ethyl Acetate	141-78-6	B	No	5,257	43,748
Formaldehyde	50-00-0	A	Yes	8	20
Isopropanol	67-63-0	B	No	826	43,748
Methanol	67-56-1	B	Yes	8	43,748
n-Propanol	71-23-8	B	No	26	43,748
n-Propyl Acetate	109-60-4	B	No	1	43,748
Styrene	100-42-5	B	Yes	20	43,748
Vinyl Acetate	108-05-4	B	Yes	95	43,748

7. REGULATIONS AND EMISSION STANDARDS

Regulations 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 regulations, codes, or requirements listed below.

7.a 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 70.94] 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.

7.b 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.

7.c Washington Administrative Code (WAC) 173-460 "Controls for New Sources of Toxic Air Pollutants" (as in effect August 21, 1998) requires Best Available Control Technology for toxic air pollutants (T-BACT), identification and quantification of emissions of toxic air pollutants and demonstration of protection of human health and safety.

7.d WAC 173-476 "Ambient Air Quality Standards" establishes ambient air quality standards for PM_{10}, $PM_{2.5}$, lead, sulfur dioxide, nitrogen dioxide, ozone, and carbon monoxide in the ambient air, which shall not be exceeded.

7.e WAC 173-490-204 "Graphic arts systems" requires printing operations that use more than 90 tpy of VOC in the printing process to meet specified control provisions. This facility is not subject to this standard because they do not consume more than 100 tons of VOCs per year.

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, sulfur dioxide, concealment and masking, and fugitive dust.

7.g SWCAA 400-040(1) "Visible Emissions" requires that no emission of an air contaminant from any emissions unit shall 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.

7.h SWCAA 400-040(4) "Odors" requires that any person who shall cause or allow the generation of any odor from any source, which may unreasonably interfere with any other property owner's use and enjoyment of their property, use recognized good practices and procedures to reduce these odors to a reasonable minimum.

7.i SWCAA 400-040(6) "Sulfur Dioxide" requires that no person shall emit a gas containing in excess of one thousand ppm of sulfur dioxide on a dry basis, corrected to 7% O_2 or 12% CO_2 as required by the applicable emission standard for combustion sources.

7.j SWCAA 400-050 "Emission Standards for Combustion and Incineration Units" requires that all provisions of SWCAA 400-040 be met and that no person shall cause or permit the emission of particulate matter from any combustion or incineration unit in excess of 0.23 grams per dry cubic meter (0.1 grains per dry standard cubic foot) of exhaust gas at standard conditions.

7.k 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.

7.l SWCAA 400-110 "New Source Review" requires that an ADP be issued by SWCAA prior to establishment of the new source, emission unit, or modification.

7.m SWCAA 400-111 "Requirements for Sources in a Maintenance Plan Area" requires that no approval to construct or alter an air contaminant source shall 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) Best Available Control Technology 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 Permittee's facility is within the Portland/Vancouver Ozone and CO Maintenance Plan Area; therefore, this regulation is applicable to the Permittee's facilities.

7.n SWCAA 490 "Emission Standards and Controls for Sources Emitting Volatile Organic Compounds" establishes emission standards and control requirements for sources of VOC located in ozone nonattainment or maintenance plan areas. SWCAA 490-204 "Graphic Arts Systems" applies to printing systems including flexographic printing systems that use more than 100 tons per year of VOCs as a component of ink, for the thinning of ink, cleaning of presses, press components, and equipment. The permittee does not use more than 100 tons per year of VOCs, therefore the standards in this section do not apply to the permittee.

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

The proposed equipment and control systems have been evaluated to determine if they meet the requirements of Best Available Control Technology (BACT) and Best Available Control Technology for toxics (T-BACT) for the types and amounts of air contaminants emitted by the processes and equipment as described below:

8.a BACT Determination – Bag Making Machines Lines 603-606 (new). These lines are a relatively minor source of VOC and TAP emissions. At the facility's level of emissions, the use of inks containing less than 1 pound per gallon VOC meets the requirements of BACT.

8.b BACT Determination – Shopper Bag and Folder Gluer Lines (existing). These lines are a relatively minor source of VOC and TAP emissions. At the facility's level of emissions, the use of inks containing less than 1 pound per gallon VOC meets the requirements of BACT.

8.c BACT Determination – Pear Wrap Line (existing). This line is a relatively minor source of VOC and TAP emissions. At the facility's level of emissions, the use of inks containing less than 1 pound per gallon VOC meets the requirements of BACT.

8.d BACT Determination – Hudson Sharp Press with Maxon Dryer (existing). This press is a relatively minor source of VOC and TAP emissions. At the facility's level of emissions, the use of inks containing less than 1 pound per gallon VOC and the use of natural gas in the Maxon dryer have been determined to meet the requirements of BACT.

8.e BACT Determination – Wolverine and Sleeter Presses (existing). During the review for ADP SWCAA 03-2477, it was determined that these presses met the requirements of BACT. At the permitted level of emissions, the use of inks containing less than 1 pound per gallon VOC has been determined to meet the requirements of BACT.

8.f BACT Determination – Space Heaters (existing). BACT for the space heaters was reviewed in ADP SWCAA 00-2269. The use of natural gas in space heaters of this size was determined to meet the requirements of BACT at the time of permitting.

8.g Prevention of Significant Deterioration (PSD) Applicability Determination. This permitting action will not result in a potential emissions increase equal to or greater than the applicable PSD thresholds. Therefore, requirements of the PSD program are not applicable to this action.

8.h Compliance Assurance Monitoring (CAM). CAM is not applicable to any emission unit at this facility because this facility is not a major source required to obtain a Part 70 or 71 permit.

9. AMBIENT IMPACT ANALYSIS

9.a TAP Small Quantity Review. The TAP emissions associated with this facility are quantified in Section 6 of this Technical Support Document. All incremental increases in individual TAP emissions are less than the applicable small quantity emission rate (SQER) identified in WAC 173-460 [effective 8/21/98].

Conclusions

9.b Installation of new Bag Making Machines (Lines 603-606), as proposed in ADP application CL-3135, will not cause a violation of the ambient air quality standards established by 40 CFR 50 "National Primary and Secondary Ambient Air Quality Standards."

9.d The new Bag Making Machines (Lines 603-606), as proposed in ADP application CL-3135, will not cause a violation of the requirements of WAC 173-460 "Controls for New Sources of Toxic Air Pollutants" (in effect August 21, 1998) or WAC 173-476 "Ambient Air Quality Standards."

9.c Installation of new Bag Making Machines (Lines 603-606), as proposed in ADP application CL-3135, will not cause a violation of 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 21-3451 in response to ADP application CL-3135. ADP 21-3451 contains approval requirements deemed necessary to assure compliance with applicable regulations and emission standards as discussed below.

10.a Supersession of Previous ADPs. ADP 21-3451 supersedes ADP 18-3310 in its entirety.

10.b General Basis. Permit requirements for equipment affected by this permitting action incorporate the operating schemes proposed by the applicant in ADP application CL-3135 and previous applications for the facility. Unless otherwise requested by the applicant, emission limits for approved equipment are based on the potential emission calculations in Section 6 of this Technical Support Document. BACT is implemented as proposed for each emission unit.

10.c Emission Limits. TAPs are limited via a blanket limitation that does not allow emissions of individual toxic air pollutants to exceed their respective small quantity emission rates established in WAC 173-460. Such a blanket limitation is more appropriate for this facility because material formulations have changed and are expected to continue changing in the future.

Even though the facility is now using low-VOC content inks and glues, the facility asked to keep the existing VOC limit of 11.50 tpy for the printing and gluing operations to account for changes in production and materials.

Emissions for natural gas combustion were limited to the quantity of emissions anticipated from operation of each emissions unit for 8,760 hours per year at full rated load using the emission factors supplied in Section 6. Visible emissions from the natural gas-fired emission units were limited to 0% opacity as this limit is readily achievable for properly operated equipment.

10.d Operating Limits and Requirements. Because this type of operation has the potential to produce nuisance odors, the requirement to minimize odor impacts on neighboring property owners from SWCAA 400-040 was incorporated directly into the ADP. The requirement to store materials containing volatile organic compounds in enclosed containers to minimize evaporation was included as implementation of good air pollution control practice (presumptive BACT).

10.e Monitoring and Recordkeeping. Sufficient monitoring and recordkeeping requirements were established to document compliance with the emission limits and provide for general requirements (e.g. upset reporting, annual emission inventory submission).

10.f Emission Monitoring and Testing Requirements. See Section 12.

10.g Reporting. SWCAA is required to be notified before a new material is used that will result in emissions of a new HAP or TAP not already reviewed. This requirement allows SWCAA and the permittee to assess whether a process or material change will have an adverse effect on air quality or require New Source Review without formal submittal of an ADP application. Significant changes must still undergo New Source Review. The ADP requires reporting of the annual air emissions inventory and reporting of the data necessary to develop the inventory. Excess emissions must be reported immediately in order to qualify for relief from monetary penalty in accordance with SWCAA 400-107.

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

11.a Startup and Shutdown Provisions: Pursuant to SWCAA 400-081 "Start-up and Shutdown," technology-based emission standards and control technology determinations shall 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 startup or shutdown, SWCAA shall include appropriate emission limitations, operating parameters, or other criteria to regulate performance of the source during startup or shutdown.

The permittee did not identify any startup and shutdown periods during which the proposed equipment is not capable of achieving continuous compliance with any applicable emission standard or approval condition. Therefore, specific startup and shutdown provisions were not included in the ADP.

11.b Alternate Operating Scenarios: SWCAA conducted a review of alternate operating scenarios applicable to equipment affected by this permitting action. The permittee did not propose or identify any applicable alternate operating scenarios. Therefore, none were included in the approval conditions.

11.c Pollution Prevention Measures: SWCAA conducted a review of possible pollution prevention measures for the facility. The facility already uses inks containing little or no VOCs to prevent VOC and TAP emissions. No additional pollution prevention measures were identified by either the permittee or SWCAA. Therefore, none were included in the approval conditions.

12. TUNING AND TESTING

Due to the nature and small quantity of air pollutant emissions from this source, periodic emission tuning and/or testing requirements were not established in the ADP.

13. HISTORY

13.a General History: This facility began operation in 1976. Printing operations began at this facility in 2000 with 3 Sleeter presses. The Wolverine flexographic printing press was permitted in 2003.

13.b Previous ADPs: The following ADPs have been issued for this facility:

ADP No.	ADP App. No.	Date Issued	Description
18-3310	CL-3056	November 19, 2018	Approved the installation of two Newlong "Shopper" bag making machines and other modifications to existing equipment. Superseded ADP 17-3222.
17-3222	CL-3007	April 27, 2017	Approved the installation of a new pear wrap print line that consisted of a Faustell printing/coating line, a sheeter, 2 storage tanks, and 2 mixing tanks. Superseded ADP 04-2552.
04-2552	CL-1642	June 7, 2004	Approved the installation of Hudson Sharp printing press and Maxon natural gas ink dryer. Superseded ADP 03-2477.
03-2477	CL-1570	Aug. 20, 2003	Wolverine press installation and operation. Superseded ADP 00-2269.
00-2269	CL-1455	May 2, 2000	Approved paper product printing operations at the facility.

14. PUBLIC COMMENT

14.a Public Notice for ADP Application CL-3135. Public notice for ADP application CL-3135 was published on the SWCAA internet website for a minimum of fifteen (15) days beginning on July 16, 2020.

14.b Public/Applicant Comment for ADP Application CL-3135. SWCAA did not receive formal comments, a comment period request, or any other inquiry from the public or the applicant regarding this ADP application. Therefore, no public comment period was provided for this permitting action.

14.c State Environmental Policy Act. A Determination of Non-Significance (SWCAA 21-002) was issued for this permitting action by SWCAA.