



**SWCAA**  
*Southwest Clean Air Agency*

**TECHNICAL SUPPORT DOCUMENT**

**Air Discharge Permit ADP 20-3438  
ADP Application L-714**

**Willamette Valley Company, LLC  
SWCAA ID - 659**

**Final: November 6, 2020**

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## Abbreviations

acfm	actual cubic feet per minute
ADP	Air Discharge Permit
AP-42	<u>Compilation of Emission Factors, AP-42, Fifth Edition, Volume 1, Stationary Point and Area Sources</u> – published by the US Environmental Protection Agency
BACT	Best available control technology
BART	Best Available Retrofit Technology
Bdt	Bone dry tons
Btu	British thermal unit
Btu/gal	Heat content expressed in British thermal units per gallon
CAS #	Chemical Abstracts Service registry number
CPM	Condensable particulate matter
cfm	Cubic feet per minute
CFR	Code of Federal Regulations
CO	Carbon monoxide
EPA	U.S. Environmental Protection Agency
ft <sup>2</sup>	Square feet
gr/dscf	Grains per dry standard cubic foot (68 °F, 1 atmosphere)
HAP	Hazardous air pollutant listed pursuant to Section 112 of the Federal Clean Air Act
LAER	Lowest achievable emission rate
lb/hr	Pounds per hour
lb/MMBtu	Pounds per million British thermal units
lb/yr	Pounds per year
MMBtu/hr	Millions of British thermal units per hour
MSDS	Material Safety Data Sheet
NO <sub>x</sub>	Nitrogen oxides
NOV	Notice of Violation
PM	Total particulate matter (includes both filterable and condensable particulate matter as measured by EPA Methods 5 and 202)
PM <sub>10</sub>	Particulate matter with an aerodynamic diameter less than or equal to 10 micrometers (includes both filterable and condensable particulate matter as measured by EPA Methods 5 and 202)
PM <sub>2.5</sub>	Particulate matter with an aerodynamic diameter less than or equal to 2.5 micrometers (includes both filterable and condensable particulate matter as measured by EPA Methods 5 and 202)
ppm	Parts per million
ppmv	Parts per million by volume
ppmvd	Parts per million by volume, dry
PSD	Prevention of Significant Deterioration
RCW	Revised Code of Washington
SQER	Small Quantity Emission Rate listed in WAC 173-460
SO <sub>2</sub>	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
tph	Tons per hour
tpy	Tons per year
TWA	Time weighted average
VOC	Volatile organic compound
WAC	Washington Administrative Code

## 1. FACILITY IDENTIFICATION

Applicant Name: Willamette Valley Company, LLC  
Applicant Address: PO Box 2280, Eugene, OR 97042

Facility Name: Willamette Valley Company  
Facility Address: 1830 Central Blvd, Centralia, WA 98531

Contact Person: Kurt Russell, Operations Manager  
Allen Johnson, Assistant Plant Manager

SWCAA Identification: 659

Primary Process: Wood flour manufacturing  
SIC/NAICS Code: 2499 / 321999  
Facility Classification: Minor

## 2. FACILITY DESCRIPTION

The Willamette Valley Company, LLC (Willamette Valley) operates a wood flour production facility in Centralia, Washington. Wood flour is produced by drying and grinding green alder bark received from off-site sources. All wood flour produced at the facility is shipped off-site for use in other finished products. This facility previously operated under the name of Ace International, Inc.

## 3. CURRENT PERMITTING ACTION

This permitting action is in response to Air Discharge Permit application number L-714 (ADP Application L-714) dated September 9, 2020. Willamette Valley submitted ADP Application L-714 requesting approval of the following:

- Installation of new bark flour sifters;
- Installation of new pneumatic material handling systems;
- Installation of a new bulk packaging system; and
- Removal of existing sifters and bulk packaging system.

The current permitting action provides approval for the proposed sifters and packaging system. ADP 14-3096 will be superseded in its entirety by this permitting action.

## 4. PROCESS DESCRIPTION

- 4.a Raw Material Handling and Processing (existing). Willamette Valley purchases raw material (alder bark) in bulk from local lumber mills. Incoming raw material is reduced to a uniform size using a hog. The incoming material often contains wood chips in addition to bark, which cannot be used in Willamette's process because the physical characteristics of wood chip cellulose fibers prevents them from being made into flour. Willamette separates the wood chips using a rotary screen and sends the material offsite. The remaining bark is "aged" onsite in bulk storage piles. Aging is basically a composting process that breaks down cellulose fibers in the bark. Once the bark is properly aged, the material is dried in the facility's drying unit.
- 4.b Bark Drying (existing). Aged bark is sent through a rotary drum dryer to reduce the material moisture content to approximately 10% at temperatures between 100°F and 175°F. Dried material is cooled as it exits the dryer, and then transferred pneumatically to the main plant for final grinding via a cyclone/baghouse combination. The rotary dryer is heated by one of two direct fired heaters (nat gas/wood).

- 4.c Bark Grinding (modified). Material catch from the dryer cyclone/baghouse passes through a hammer mill, and is conveyed by bucket elevator to a main distribution bin. Material is fed from the distribution bin to one of five material grinders where the bark is reduced to a fine flour. Ground material is transferred by screw conveyor to two Rotex screening units (sifters). Emissions from the sifters are controlled with process enclosure and fabric filtration (Blender Baghouse). Oversized material is mechanically conveyed to the grinders for further processing or sent to the bark dehydrator fuel bin. Finished flour is mechanically conveyed to the blending/packaging operation.

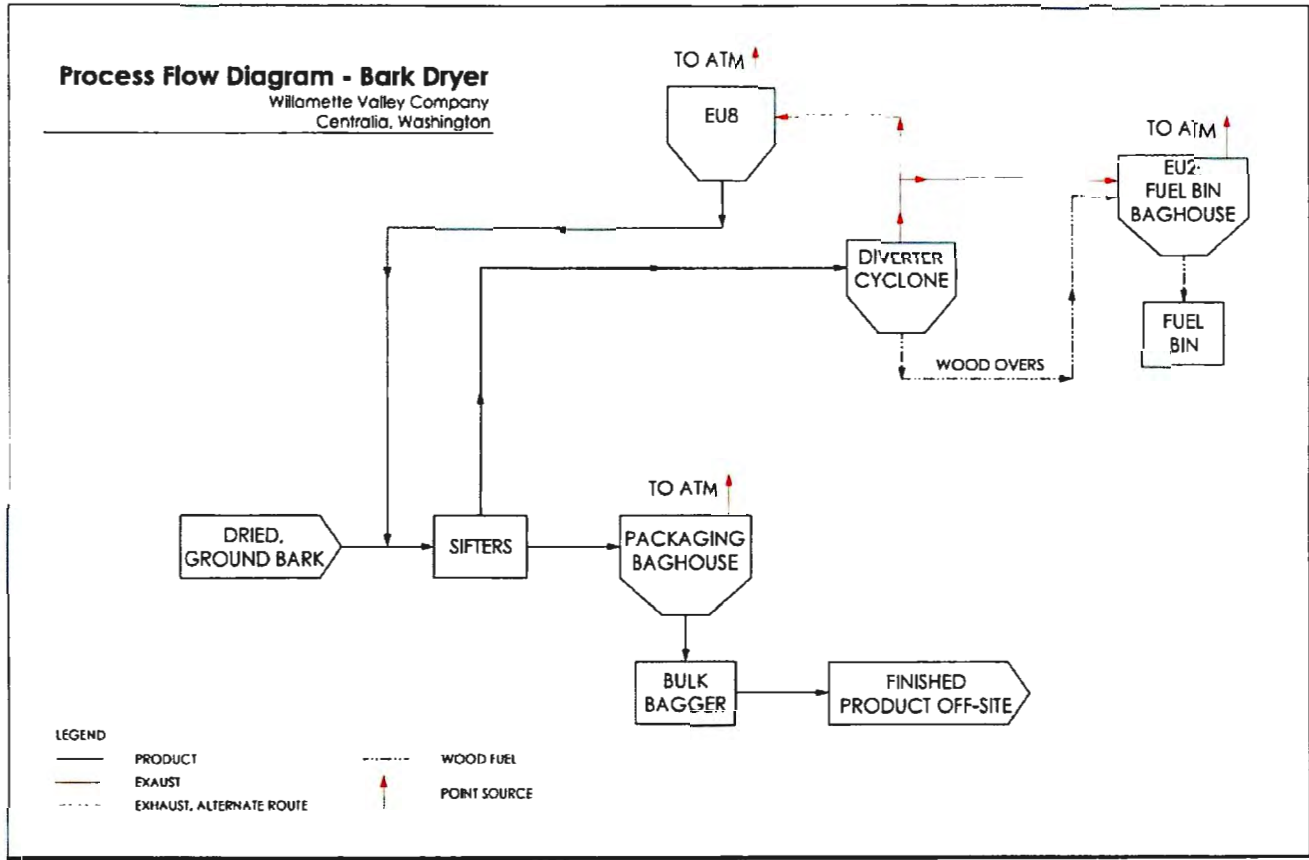
*ADP Application L-714. Applicant proposes to replace the existing sifters with new sifters manufactured by Prater Industries, Inc. Existing mechanical material conveyance systems will be removed and replaced with similar pneumatic conveyance systems. Oversized material will be pneumatically transferred from the sifters to the wood-out belt using a new collection cyclone. Cyclone exhaust will be vented to either the Fuel Bin Baghouse or Blender Baghouse (selectable). Finished flour will be pneumatically transferred from the sifters to the packaging/bagging operation using a new conveyance system equipped with a dedicated baghouse (Packaging Baghouse).*

- 4.d Wood Flour Blending (existing). Finished flour and other components are placed into one of three bulk unloading units. Material is pneumatically transferred from the unloading units to an enclosed blender. Fugitive dust emissions from the process are controlled with process enclosure and fabric filtration (Blender Baghouse). All equipment except the Blender Baghouse is located inside a building envelope.

*ADP Application L-714. Applicant is proposing to move the existing blending operation from the warehouse building to the bark room. Fugitive dust emissions will continue to be controlled with process enclosure and the Blender Baghouse.*

- 4.e Wood Flour Packaging (modified). Blended bulk product is pneumatically transferred from the blender to a bucket elevator, which feeds into a bulk bagging unit. Filled bulk totes/bags are removed from the bagging unit with forklifts and stored in an adjacent warehouse. Fugitive dust emissions from the process are controlled with process enclosure and fabric filtration (Blender Baghouse). All equipment except the Blender Baghouse is located inside a building envelope.

*ADP Application L-714. Applicant proposes to replace the existing packaging/bagging system with a new robotic packaging/bagging system manufactured by Conveying Industries, Inc. Packaging/bagging operations will be moved from the warehouse building to the bark room. Fugitive dust emissions will continue to be controlled with process enclosure and the Blender Baghouse.*



## 5. EQUIPMENT/ACTIVITY IDENTIFICATION

5.a Bark Dehydrator (existing). One Heil Cyclomatic model SD75-22A rotary dryer with a 3-pass configuration. Exhaust air and process material is transferred pneumatically from the dryer to a cyclone/baghouse combination. Process heat for the dryer will be provided by one of two heaters. Only one heater operates at a time. The heaters are identified as follows:

- One Eclipse Ratiomatic model 1250RM natural gas fired heater with a rated heat input of 12.5 MMBtu/hr.
- One Energy Unlimited model EU10R15 wood fired suspension heater with a rated heat input of 10.0 MMBtu/hr.

Dehydrator Cyclone. One Carothers stainless steel lined cyclone with a diameter of 8.5'. The cyclone exhausts to the dehydrator baghouse.

### Dehydrator Baghouse

Mfg / Model:	Carothers model 270TR12HEI
Rated Airflow:	20,000 acfm
Filtration Area / Media:	5,130 ft <sup>2</sup> of 12 oz "Combo Felt" media. (270 filter bags)
Filter Cleaning:	Pulse jet
Exhaust Configuration:	24" dia vertical exhaust at ~30' above ground level

5.b Wood Heater Fuel Bin – Baghouse (existing). This unit controls fugitive emissions from wood heater fuel handling.

Mfg / Model: Pulse Jet / RPJ24-8  
Rated Airflow: 1,800 acfm  
Filtration Area / Media: 307 ft<sup>2</sup> (24 filter bags) of 16 oz/yd<sup>2</sup> glazed polyester  
Filter Cleaning: Reverse pulse jet  
Exhaust Configuration: 8" dia vertical exhaust at 25' above ground level

5.c Bark Grinder #1 (existing). One 200 hp Pulvocron grinder used to pulverize dried bark. Emissions are controlled with process enclosure and a dedicated baghouse.

Mfg / Model: Flex Kleen / 84CT64  
Rated Airflow: 3,000 acfm  
Filtration Area / Media: 640 ft<sup>2</sup> (64 filter bags) of 16 oz/yd<sup>2</sup> Dacron  
Filter Cleaning: Pulse jet  
Exhaust Configuration: 10" dia horizontal exhaust at 48.5' above ground level

5.d Bark Grinder #2 (existing). One 200 hp Pulvocron grinder used to pulverize dried bark. Emissions are controlled with process enclosure and a dedicated baghouse.

Mfg / Model: Flex Kleen / 84CT64  
Rated Airflow: 3,000 acfm  
Filtration Area / Media: 640 ft<sup>2</sup> (64 filter bags) of 16 oz/yd<sup>2</sup> Dacron  
Filter Cleaning: Pulse jet  
Exhaust Configuration: 10" dia horizontal exhaust at 48.5' above ground level

5.e Bark Grinder #3 (existing). One 200 hp Pulvocron grinder used to pulverize dried bark. Emissions are controlled with process enclosure and a dedicated baghouse.

Mfg / Model: Flex Kleen model 84CT46  
Rated Airflow: 2,500 acfm  
Filtration Area / Media: 460 ft<sup>2</sup> (46 filter bags) of 16 oz/yd<sup>2</sup> Dacron  
Filter Cleaning: Pulse jet  
Exhaust Configuration: 8" dia horizontal exhaust at 48.5' above ground level

5.f Bark Grinder #4 (existing). One 200 hp Pulvocron grinder used to pulverize dried bark. Emissions are controlled with process enclosure and a dedicated baghouse.

Mfg / Model: Flex Kleen model 84CT46  
Rated Airflow: 2,500 acfm  
Filtration Area / Media: 460 ft<sup>2</sup> (46 filter bags) of 16 oz/yd<sup>2</sup> Dacron  
Filter Cleaning: Pulse jet  
Exhaust Configuration: 8" dia horizontal exhaust at 48.5' above ground level

5.g Bark Grinder #5 (existing). One 200 hp Pulvocron grinder used to pulverize dried bark. Emissions are controlled with process enclosure and a dedicated baghouse.

Mfg / Model: Flex Kleen model 100WRTC48  
Rated Airflow: 3,000 acfm  
Filtration Area / Media: 610 ft<sup>2</sup> (48 filter bags) of 16 oz/yd<sup>2</sup> Dacron  
Filter Cleaning: Pulse jet  
Exhaust Configuration: 12" dia horizontal exhaust at 31.7' above ground level

5.h Flour Blender – Blender Baghouse (existing). One Munson Machinery model 700TH14OMS blender (s/n 130585) with a rated capacity of 6,000 lb/hr. The Munson blender receives unblended flour from three Carothers bulk unloaders. Blended flour is transferred to a Spiroflow model O22R bulk bag filler. The blender and the bulk unloaders are vented to a dedicated dust collector (Blender Baghouse). All process equipment is located inside a process building. Material catch from the Blender Baghouse is transferred back into the blending operation.

Blender Baghouse

Mfg / Model: Grinding & Sizing, LLC / PO 49069 (s/n D032505E3052)  
 Rated Airflow: 3,000 acfm  
 Filtration Area / Media ~430 ft<sup>2</sup> (56 filter bags, 4.625" dia x 76" length) of 16 oz/yd<sup>2</sup> polyester felt  
 Filter Cleaning: Pulse jet  
 Exhaust Configuration: 10" dia vertical exhaust at 20' above ground level

5.i Flour Transfer System – Packaging Baghouse (new). This unit pneumatically transfers finished flour from the sifters to the packaging operation using a dedicated dust collector (Packaging Baghouse).

Packaging Baghouse

Mfg / Model: Carothers and Sons / CSL 9BR5RC  
 Rated Airflow: 400 acfm  
 Filtration Area / Media: ~70 ft<sup>2</sup> (9 filter bags) of 16 oz/yd<sup>2</sup> polyester  
 Filter Cleaning: Pulse jet  
 Exhaust Configuration: 3" dia vertical exhaust at 25' above ground level

5.j Equipment/Activity Summary.

ID No.	Generating Equipment/Activity	# of Units	Control Measure/Equipment	# of Units
1	Bark Dehydrator - Heil (12.5 MMBtu/hr Nat Gas, 10.0 MMBtu/hr wood)	1	Process Enclosure Cyclone (Carothers – 8.5' dia) Baghouse (Carothers – 20,000 acfm)	2
2	Wood Heater Fuel Bin	1	Process Enclosure, Baghouse (Pulse Jet Filter – 1,800 acfm)	1
3	Bark Grinder #1 (Pulvocron - 200hp)	1	Process Enclosure, Baghouse (Flex Kleen – 3,000 acfm)	1
4	Bark Grinder #2 (Pulvocron - 200hp)	1	Process Enclosure, Baghouse (Flex Kleen – 3,000 acfm)	1
5	Bark Grinder #3 (Pulvocron - 200hp)	1	Process Enclosure, Baghouse (Flex Kleen – 2,500 acfm)	1
6	Bark Grinder #4 (Pulvocron - 200hp)	1	Process Enclosure, Baghouse (Flex Kleen – 2,500 acfm)	1
7	Bark Grinder #5 (Pulvocron - 200hp)	1	Process Enclosure, Baghouse (Flex Kleen – 3,000 acfm)	1
8	Flour Blender (Munson Machinery)	1	Process Enclosure, Baghouse (Grinding & Sizing – 3,000 acfm)	1
9	Flour Transfer System	1	Process Enclosure, Baghouse (Carothers and Sons – 400 acfm)	1



**6. EMISSIONS DETERMINATION**

Emissions to the ambient atmosphere from facility operations, as proposed in ADP Application L-714, consist of nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), volatile organic compounds (VOC), particulate matter (PM) sulfur dioxide (SO<sub>2</sub>), toxic air pollutants (TAPs), and hazardous air pollutants (HAPs).

6.a Bark Dehydrator (existing). The Heil bark dehydrator is capable of operating with either a natural gas fired heater (Eclipse) or a wood fired heater (Energy Unlimited). Potential emissions from dehydrator operation are calculated from the maximum rated heat input (natural gas – 12.5 MMBtu/hr, wood – 10.0 MMBtu/hr), 8,760 hr/yr of operation, a maximum discharge rate of 20,000 dscfm, and applicable emission factors. Only one heater operates at any given time. Emission limits for the dehydrator have been established based on the most emissive operating scenario, which is full time operation of the wood fired heater.

Criteria Pollutant Emissions. Emission factors for operation while firing natural gas are taken from EPA AP-42, Section 1.4 “Natural Gas Combustion” (7/98) [all NG heater factors], proposed BACT limits [filterable dryer PM/PM<sub>10</sub>], and EPA PM Calculator Version 2.0 [filterable dryer PM<sub>2.5</sub>].

Eclipse Natural Gas Fired Heater:			Emissions	
<u>Pollutant</u>	<u>Emission Factor</u>	<u>(lb/hr)</u>		<u>(tpy)</u>
NO <sub>x</sub>	0.098 lb/MMBtu	1.23		5.37
CO	0.082 lb/MMBtu	1.03		4.49
VOC	0.0054 lb/MMBtu	0.07		0.30
SO <sub>2</sub>	0.0006 lb/MMBtu	0.008		0.03
PM/PM <sub>10</sub> /PM <sub>2.5</sub> (NG)	0.0075 lb/MMBtu	0.094		0.41
PM/PM <sub>10</sub> (dryer)	0.005 gr/dscf (f)	0.86		3.75
PM <sub>2.5</sub> (dryer)	83% PM	0.71		3.12
PM/PM <sub>10</sub> (total)	-	0.95		4.17
PM <sub>2.5</sub> (total)	-	0.81		3.53
CO <sub>2</sub> e	117 lb/MMBtu	--		6,406
HAPs	See Below			0.004
TAPs	See Below			0.004

Emission factors for operation while firing wood are taken from proposed/demonstrated BACT limits [NO<sub>x</sub>, CO, filterable PM/PM<sub>10</sub>], EPA PM Calculator Version 2.0 [filterable PM<sub>2.5</sub>], emission test data dated 11/24/09 [condensable PM], and EPA AP-42 Section 1.6 "Wood Residue Combustion in Boilers" (7/03) [VOC, SO<sub>2</sub>].

Energy Unlimited Wood Fired Heater:			Emissions	
<u>Pollutant</u>	<u>Emission Factor</u>	<u>(lb/hr)</u>		<u>(tpy)</u>
NO <sub>x</sub>	0.49 lb/MMBtu	4.90		21.46
CO	0.25 lb/MMBtu	2.50		10.95
VOC	0.017 lb/MMBtu	0.17		0.75
SO <sub>2</sub>	0.025 lb/MMBtu	0.25		1.10
PM/PM <sub>10</sub> (f)	0.010 gr/dscf (f)	1.71		7.51
PM <sub>2.5</sub> (f)	83% PM	1.42		6.23
PM/PM <sub>10</sub> /PM <sub>2.5</sub> (c)	1.343 lb/hr	1.34		5.88
PM/PM <sub>10</sub> (total)	-	3.06		13.39
PM <sub>2.5</sub> (total)	-	2.77		12.11

Energy Unlimited Wood Fired Heater:		Emissions	
<u>Pollutant</u>	<u>Emission Factor</u>	<u>(lb/hr)</u>	<u>(tpy)</u>
CO <sub>2e</sub>	206.4 lb/MMBtu	--	9,040
HAPs	See Below		1.17
TAPs	See Below		1.18

Toxic/Hazardous Air Pollutant Emissions. TAP/HAP emission factors for the natural gas burner are taken from EPA AP-42, Section 1.4 "Natural Gas Combustion" (7/98). TAP/HAP emission factors for the wood burner are taken from EPA AP-42 Section 1.6 "Wood Residue Combustion in Boilers" (7/03). HAP and TAP compounds with an emission factor rating of "D" or less were not included due to the questionable applicability of the emissions data. A control efficiency of 80% has been applied to solid phase emission factors to reflect the use of fabric filtration. HAP compounds are denoted with an asterisk.

<u>Pollutant</u>	<u>Emission Factor</u>	<u>Potential Emissions</u>
Natural Gas Fire:		
Benzene (NG)	2.06E-6 lb/MMBtu	0.2 lb/yr
Formaldehyde (NG)	7.35E-5 lb/MMBtu	8.0 lb/yr
Wood Fire:		
2,4,6-Trichlorophenol*	2.20E-08 lb/MMBtu	0.002
2-Chlorophenol	2.40E-08 lb/MMBtu	0.002
Acetaldehyde*	8.30E-04 lb/MMBtu	72.7
Acrolein*	2.02E-05 lb/MMBtu	1.8
Antimony*	7.90E-06 lb/MMBtu	0.1
Arsenic*	4.40E-06 lb/MMBtu	0.4
Barium	1.70E-04 lb/MMBtu	3.0
Benzene*	4.20E-03 lb/MMBtu	367.9
Beryllium*	2.20E-07 lb/MMBtu	0.02
Cadmium*	8.20E-07 lb/MMBtu	0.07
Chromium (hex)*	7.00E-07 lb/MMBtu	0.06
Chromium (total)*	4.20E-06 lb/MMBtu	0.4
Cobalt*	6.50E-06 lb/MMBtu	0.1
Copper	4.90E-05 lb/MMBtu	0.9
Fluorene*	3.40E-06 lb/MMBtu	0.3
Formaldehyde*	1.17E-03 lb/MMBtu	102.2
Hydrogen chloride*	1.90E-02 lb/MMBtu	1,664.4
Iron (as oxide fume)	9.90E-04 lb/MMBtu	17.3
Lead*	4.80E-05 lb/MMBtu	0.8
Manganese*	3.20E-04 lb/MMBtu	28.03
Mercury*	3.50E-06 lb/MMBtu	0.3
Naphthalene*	9.70E-05 lb/MMBtu	8.5
Nickel*	6.60E-06 lb/MMBtu	0.6
Phenol*	5.10E-05 lb/MMBtu	4.5
Selenium*	2.80E-06 lb/MMBtu	0.05
Toluene*	9.20E-04 lb/MMBtu	80.6
Zinc (as oxide fume)	8.40E-05 lb/MMBtu	7.4
PCBs (total)*	7.93E-09 lb/MMBtu	0.0007
PAHs (equiv)*	3.19E-06 lb/MMBtu	0.3
2,3,7,8-TCDD (equiv)*	6.54E-10 lb/MMBtu	0.000057

6.b Material Handling Baghouses (modified). Potential emissions from material handling baghouses are calculated based on each unit's rated flowrate, 8,760 hr/yr of operation and a maximum emission concentration of 0.005 gr/dscf. All emissions are assumed to be PM<sub>10</sub>. PM<sub>2.5</sub> emissions are assumed to be 53% of PM<sub>10</sub> emissions (EPA PM Calculator Ver 2.0 / SCC-30703099).

Baghouse	Pollutant	Flow (cfm)	Emission Concentration (gr/dscf)	Operation (hrs)	Emissions	
					(lb/hr)	(tpy)
Grinder #1	PM/PM <sub>10</sub>	3,000	0.005	8,760	0.13	0.56
	PM <sub>2.5</sub>		53% PM <sub>10</sub>		0.068	0.30
Grinder #2	PM/PM <sub>10</sub>	3,000	0.005	8,760	0.13	0.56
	PM <sub>2.5</sub>		53% PM <sub>10</sub>		0.068	0.30
Grinder #3	PM/PM <sub>10</sub>	2,500	0.005	8,760	0.11	0.47
	PM <sub>2.5</sub>		53% PM <sub>10</sub>		0.057	0.25
Grinder #4	PM/PM <sub>10</sub>	2,500	0.005	8,760	0.11	0.47
	PM <sub>2.5</sub>		53% PM <sub>10</sub>		0.057	0.25
Grinder #5	PM/PM <sub>10</sub>	3,000	0.005	8,760	0.13	0.56
	PM <sub>2.5</sub>		53% PM <sub>10</sub>		0.068	0.30
Fuel Bin	PM/PM <sub>10</sub>	1,800	0.005	8,760	0.08	0.34
	PM <sub>2.5</sub>		53% PM <sub>10</sub>		0.04	0.18
Blender	PM/PM <sub>10</sub>	3,000	0.005	8,760	0.13	0.56
	PM <sub>2.5</sub>		53% PM <sub>10</sub>		0.068	0.30
Bagging	PM/PM <sub>10</sub>	400	0.005	8,760	0.017	0.08
	PM <sub>2.5</sub>		53% PM <sub>10</sub>		0.009	0.04

6.c Emissions Summary/Facilitywide Potential to Emit. Facilitywide potential to emit as calculated in the sections above is summarized below.

Pollutant	Potential Emissions	Project Increase
NO <sub>x</sub>	21.46 tpy	0.00 tpy
CO	10.95 tpy	0.00 tpy
VOC	0.74 tpy	0.00 tpy
SO <sub>2</sub>	1.10 tpy	0.00 tpy
PM	16.92 tpy	0.08 tpy
PM <sub>10</sub>	16.92 tpy	0.08 tpy
PM <sub>2.5</sub>	13.98 tpy	0.04 tpy
CO <sub>2e</sub>		0.0 tpy
HAP	1.17 tpy	0.00 tpy
TAP	1.18 tpy	0.00 tpy

Pollutant	CAS Number	Category	Facilitywide Emissions (lb/yr)	Project Increase (lb/yr)
2,4,6-Trichlorophenol	88-06-2	HAP/TAP A	0.002	0.0
2-Chlorophenol	108-43-0	TAP A	0.002	0.0
Acetaldehyde	75-07-0	HAP/TAP A	72.7	0.0
Acrolein	107-02-8	HAP/TAP B	1.8	0.0
Antimony	7440-36-0	HAP/TAP B	0.1	0.0

Pollutant	CAS Number	Category	Facilitywide Emissions (lb/yr)	Project Increase (lb/yr)
Arsenic	7440-38-2	HAP/TAP A	0.4	0.0
Barium	7440-39-3	TAP B	3.0	0.0
Benzene	71-43-2	HAP/TAP A	367.9	0.0
Beryllium	7440-41-7	HAP/TAP A	0.02	0.0
Cadmium	7440-43-9	HAP/TAP A	0.07	0.0
Chromium (total)	-	HAP/TAP B	0.4	0.0
Chromium (hex)	7440-47-3	HAP/TAP A	0.06	0.0
Cobalt	7440-48-4	HAP/TAP B	0.1	0.0
Copper	7440-50-8	TAP B	0.9	0.0
Fluorene	86-73-7	HAP/TAP B	0.3	0.0
Formaldehyde	50-00-0	HAP/TAP A	102.2	0.0
Hydrogen Chloride	7647-01-0	HAP/TAP B	1,664.4	0.0
Iron (as oxide fume)	1309-37-1	TAP B	17.3	0.0
Lead	7439-92-1	HAP/TAP A	0.8	0.0
Manganese	7439-96-5	HAP/TAP B	28.0	0.0
Mercury	7439-97-6	HAP/TAP B	0.3	0.0
Naphthalene	91-20-3	HAP/TAP B	8.5	0.0
Nickel	7440-02-2	HAP/TAP A	0.6	0.0
Phenol	108-95-2	HAP/TAP B	4.5	0.0
Selenium	7782-49-2	HAP/TAP B	0.05	0.0
Toluene	108-88-3	HAP/TAP B	80.6	0.0
Zinc (as oxide fume)	1314-13-2	TAP B	7.4	0.0
PCBs (total)	1336-36-3	HAP/TAP A	0.0007	0.0
PAHs (total-equiv)	-	HAP/TAP A	0.3	0.0
2,3,7,8-TCDD (equiv)	-	HAP/TAP A	5.7 E-5	0.0

## 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) 70.94.141 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 70.94.152 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 Air Discharge Permit for installation and establishment of an air contaminant source.
- 7.c WAC 173-460 "Controls for New Sources of Toxic Air Pollutants" 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. SWCAA implements WAC 173-460 as in effect on August 21, 1998.

- 7.d WAC 173-476 "Ambient Air Quality Standards" establishes ambient air quality standards for PM<sub>10</sub>, PM<sub>2.5</sub>, lead, sulfur dioxide, nitrogen dioxide, ozone, and carbon monoxide in the ambient air, which shall not be exceeded.
- 7.e 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.f 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.g SWCAA 400-060 "Emission Standards for General Process Units" prohibits particulate matter emissions from all new and existing process units in excess of 0.1 grains per dry standard cubic foot of exhaust gas.
- 7.h SWCAA 400-109 "Air Discharge Permit Applications" requires that an Air Discharge Permit 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 Air Discharge Permit application to request such changes. An Air Discharge Permit 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.i SWCAA 400-110 "New Source Review" requires that SWCAA issue an Air Discharge Permit in response to an Air Discharge Permit application prior to establishment of the new source, emission unit, or modification.
- 7.j SWCAA 400-113 "Requirements for New Sources in Attainment or Nonclassifiable Areas" 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) Best Available Control Technology will be employed for all air contaminants to be emitted by the proposed equipment;
  - (3) The proposed equipment will not cause any ambient air quality standard to be exceeded; and
  - (4) 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.

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

The proposed equipment and control systems incorporate Best Available Control Technology (BACT) for the types and amounts of air contaminants emitted by the processes as described below:

- 8.a BACT Determination – Pneumatic Material Handling Systems. The proposed use of process enclosure, high efficiency filtration and vertical dispersion of exhaust streams has been determined to meet the requirements of BACT for emissions from pneumatic material handling systems at this facility.
- 8.b BACT Determination – Bulk Packaging Systems. The proposed use of process enclosure, high efficiency filtration and vertical dispersion of exhaust streams has been determined to meet the requirements of BACT for emissions from bulk packaging systems at this facility.

### Other Determinations

- 8.c Prevention of Significant Deterioration (PSD) Applicability Determination: The potential to emit of this facility is less than applicable PSD applicability thresholds. Likewise, 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 permit.

## **9. AMBIENT IMPACT ANALYSIS**

- 9.a TAP Small Quantity Review. The new equipment and modifications proposed in ADP Application L-671 will not affect the type or quantity of TAP emissions from this facility.

### **Conclusions**

- 9.b Installation of new process equipment, as proposed in ADP Application L-714, will not cause the ambient air quality requirements of Title 40 Code of Federal Regulations (CFR) Part 50 "National Primary and Secondary Ambient Air Quality Standards" to be violated.
- 9.c Installation of new process equipment, as proposed in ADP Application L-714, will not cause the requirements of WAC 173-460 "Controls for New Sources of Toxic Air Pollutants" (as in effect 8/21/98) or WAC 173-476 "Ambient Air Quality Standards" to be violated.
- 9.d Installation of new process equipment, as proposed in ADP Application L-714, 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 20-3438 in response to ADP Application L-714. ADP 20-3438 contains approval requirements deemed necessary to assure compliance with applicable regulations and emission standards as discussed below.

- 10.a Supersession of Previous Permits. ADP 20-3438 supersedes ADP 14-3096 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 L-714. Permit requirements established by this action are intended to implement BACT, minimize emissions, and assure compliance with applicable requirements on a continuous basis. Emission limits for approved equipment are based on the potential emissions as calculated in Section 6 of this Technical Support Document.
- 10.c Monitoring and Recordkeeping Requirements. ADP 20-3438 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. Specific requirements are established for baghouse differential pressure, combustion zone temperature, hours of operation, and dehydrator fuel consumption.

- 10.d Reporting Requirements. ADP 20-3438 establishes general reporting requirements for annual air emissions, upset conditions and excess emissions. Specific reporting requirements are established for hours of operation and dehydrator fuel consumption. Reports are to be submitted on an annual basis.
- 10.e Wood Flour Sifting/Blending/Packaging. Wood flour sifting, blending and packaging operations use a combination of process enclosure and negative ventilation to control fugitive dust emissions associated with sifting, blending, and packaging activities. Primary process equipment is located inside a building envelope so fugitive emissions are expected to be negligible. The Blender Baghouse is the only unit with ambient exhaust and is regulated as an emission unit. Visible emissions from the building envelope and the Blender Baghouse exhaust are expected to be 0%.
- 10.f Requirements for Unmodified Emission Units. Permit requirements for existing emission units not affected by ADP Application L-714 are carried forward unchanged from ADP 14-3096.

## 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 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 start-up or shutdown, SWCAA shall include appropriate emission limitations, operating parameters, or other criteria to regulate performance of the source during start-up or shutdown.

Heil Dehydrator – Wood Fired Heater. NO<sub>x</sub> and CO emission limits for the wood fired heater are intended to be applicable when the dehydrator is in normal operation. The combustion system of the wood fired heater is not capable of reliably achieving these emission levels until it establishes and maintains a minimum combustion zone temperature. Consequently, NO<sub>x</sub> and/or CO emissions may exceed the applicable emissions limits during start-up and shutdown periods. In consideration of these technical limitations, the applicable NO<sub>x</sub> and CO limits do not apply during start-up and shutdown periods.

- 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 permit requirements.
- 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 permit requirements.

## 12. EMISSION MONITORING AND TESTING

- 12.a Emission Testing – Heil Bark Dehydrator / Energy Unlimited Burner. Permit requirements for the bark dehydrator require the permittee to conduct emission testing on a continuing five-year schedule. Periodic testing is intended to demonstrate ongoing compliance with applicable emission limits. All emission testing is to be conducted in accordance with ADP 20-3438, Appendix A.
- 12.b Emission Monitoring – Heil Bark Dehydrator / Energy Unlimited Burner. Permit requirements for the bark dehydrator require the permittee to perform annual emission monitoring for the purpose of tracking future performance and assuring compliance with facilitywide emission limits. All emission monitoring is to be conducted in accordance with ADP 20-3438, Appendix B.

### 13. FACILITY HISTORY

13.a Previous Permitting Actions. SWCAA has previously issued the following Permits for Willamette Valley's facility in Centralia:

<u>Date</u>	<u>Application Number</u>	<u>Permit Number</u>	<u>Purpose</u>
6/30/2014	L-671	14-3096	Installation and operation of a Munson wood flour blender with associated Grinding and Sizing LLC baghouse (3000 acfm).
2/9/2010	L-638	10-2918	Modification of emission limits for wood fired dehydrator heater. Installation of replacement dehydrator baghouse. Superseded by ADP 14-3096.
7/31/07	L-599	95-1830R2	Modification of rotary dryer to incorporate a wood fired heater. (Energy Unlimited model EU10R15 heater rated at 10.0 MMBtu/hr) Superseded by ADP 10-2918.
7/6/2001	L-481	95-1830R1	Modification of bark processing facility and replacement of existing equipment. (Carothers model 110TR10 baghouse, new Carothers cyclone, additional equipment) Superseded by ADP 95-1830R2.
6/17/1996	L-362	96-1891	Installation of new vacuum system in packaging area. (Flex Kleen 84CT46 baghouse - never installed). Superseded by ADP 95-1830R1.
1/8/1996	L-350	95-1830	Installation of rotary dryer with associated baghouse and cyclone. (Heil SD-75-22A Dryer with Eclipse Ratiomatic 1250 RM burner, cyclone, Carter-Day baghouse) Superseded by ADP 95-1830R1.
6/18/1992	L-276	92-1435	Installation of hydro-mulch manufacturing equipment with associated material handling and pollution control equipment.
7/16/1990	L-225	90-1240	Installation of a fugitive dust control system.
4/14/1988	L-176	88-982	Installation of new bark grinder and associated material handling equipment. (Pulvocron grinder, Flex Kleen 100-WRTC-48 baghouse) Superseded by ADP 95-1830R1.
2/2/1987	L-150	86-860	Installation of rotary dryer, hammer mill, associated material sifters, and a pneumatic transfer system. (Heil dryer, cyclone, Carter-Day model 120 HPT8 baghouse, rotary airlocks, a cyclone and baghouse). Superseded by ADP 95-1830R1.
1/28/1980	L-99	80-504	Installation of bark grinding equipment and associated emission control equipment (4 Pulvocron grinders, two Flex Kleen model 84CT64 baghouses, two Flex Kleen model 84CT46 baghouses). Superseded by ADP 95-1830R1.

13.b Compliance Status. A search of source records on file at SWCAA did not identify any outstanding compliance issues at this facility.

### 14. PUBLIC INVOLVEMENT OPPORTUNITY

14.a Public Notice for ADP Application L-714. Public notice for ADP Application L-714 was published on the SWCAA internet website for a minimum of (15) days beginning on September 29, 2020.



- 14.b Public/Applicant Comment for ADP Application L-714. SWCAA did not receive specific comments, a comment period request or any other inquiry from the public regarding this ADP application. Therefore no public comment period was provided for this permitting action.
  
- 14.c State Environmental Policy Act. A complete SEPA checklist was submitted by Willamette Valley Company, LLC in conjunction with ADP Application L-714. After reviewing the checklist, SWCAA has made a Determination of Nonsignificance (DNS 20-039) concurrent with issuance of ADP 20-3438.