Hampton Lumber Mills – Washington, Inc.
Morton Facility

Title V Basis Statement
SW97-5-R3

June 16, 2025

Southwest Clean Air Agency
5101 NE 82 Avenue, Suite 102
Vancouver, WA 98662
Telephone: (360) 574-3058

PERMIT ENGINEER:	Vannessa McClelland, Air Quality Engineer
REVIEWED BY:	Clinton Lamoreaux, Chief Engineer Uri Papish, Executive Director

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I. GENERAL INFORMATION AND CERTIFICATION

Company Name:	Hampton Lumber Mills—Washington, Inc.
Facility Name:	Hampton Lumber Mills—Washington, Inc. – Morton Facility
Facility Address:	302 State Route 7 Morton, WA 98356
Mailing Address:	PO Box 189 Randle, Washington 98377
SIC Code/NAICS Number:	2421/321113
AIRS Number:	53-041-00003
Unified Business Identification Number:	601-954-915 (Morton)
Responsible Official:	Aaron Poquette, Cowlitz Division Mill Manager

Basis for Title V Applicability:
Hampton Lumber Mills—Washington, Inc. - Morton facility (Hampton Lumber Morton) has the potential to emit more than 100 tons per year (tpy) of carbon monoxide (CO) and nitrogen oxides (NO_X), which are criteria air pollutants listed under section 302 of the Federal Clean Air Act, and more than 100 tons per year of volatile organic compounds (VOCs).

Facility-wide Potential To Emit Summary

Pollutant	Emissions (tons per year)
Nitrogen oxides	122.62
Carbon monoxide	129.26
Volatile organic compounds	174.65
Sulfur dioxide	1.28
Particulate Matter	97.04
PM_{10}	75.32
$PM_{2.5}$	54.32
Combined HAPs	22.38
Acetaldehyde	9.61
Methanol	9.27
CO_2 equivalent	54,704

Current Permitting Action:
This Title V Air Operating Permit (Permit/AOP) is being issued in response to a Title V renewal application submitted by Hampton Lumber. Also, this Permit incorporates Air Discharge Permit (ADP) 22-3511 that was issued since the last Title V Permit renewal was issued and removes Hampton Drying Company (HDC) as a support facility. ADP 22-3511 approved the installation of an anti-stain treatment system.

AOP SW97-5-R3

1. Initial Permit Application Received	June 7, 1995
2. Permit Application Due:	November 17, 2021
3. Permit Application Received:	May 17, 2021
4. Permit Application Deemed Complete:	November 16, 2021
5. Permit Application Sent to EPA:	May 17, 2021
6. Draft Permit Issued:	March 3, 2025
7. Proposed Permit Issued:	April 9, 2025
8. Final Permit Issued:	June 16, 2025
9. Renewal Permit Application Due:	December 16, 2029
10. Permit Expiration:	June 16, 2030

Attainment Area:
Hampton Lumber Morton is located in an area which is in attainment or unclassifiable for all criteria pollutants.

Facility Description:
Hampton Lumber Morton is a manufacturer of dimensional lumber products primarily for the construction industry.

This Permit applies to a lumber mill located at 302 State Route 7 in Morton, Washington. Dimensional lumber manufactured mainly from Douglas fir, but also hemlock, spruce, pine, and other woods, is produced at Hampton Lumber Morton both kiln dried and green and is then shipped offsite. Hampton Lumber Morton's equipment is divided into seven emission units designated as EU-1 through EU-7. EU-1 through EU-5 are directly involved in lumber production. EU-6 and EU-7 are emergency equipment.

Hampton Lumber Morton typically operates two 10-hour work shifts per day at the sawmill and planer mill. Occasionally, this schedule is extended to a third work shift when demand is exceptionally high. Days of operation range from five to six days per week, depending on seasonal demand and delivery schedules. The process boiler and dry kilns operate 24 hours per day, 7 days per week.

II. EMISSION UNIT IDENTIFICATION

EU No.	Generating Equipment/Activity	Emission Control	CAM Applicable
EU-1	Log Yard	Water truck	No

EU No.	Generating Equipment/Activity	Emission Control	CAM Applicable
EU-2	Sawmill - Planer, Bunkers, Hog	Building enclosures, Western Pneumatics baghouse, Plastic sheeting and wet suppression	No
EU-3	Hog Fuel Boiler	One multi-clone/Branch Environmental wet venturi scrubber combination One settling pond	Yes for PM on the scrubber
EU-4	Dry Kilns	None	No
EU-5	Anti-Stain Treatment	Mist eliminator	No
EU-6	Office Emergency Propane Engine	Low-sulfur fuel, limited hours	No
EU-7	Fire Pump Emergency Diesel Engine	Low-sulfur fuel, limited hours	No

Sawmill Baghouse Compliance Assurance Monitoring (CAM):
Performance testing was performed by Alliance Source Testing, LLC on September 21-22, 2021, at the inlet to the planer baghouse and resulted in an average emission rate of 2.23 pounds per hour (lb/hr) particulate matter (PM). Based on the test results, the uncontrolled planer PM emissions are 9.8 tpy, assuming operation 8,760 hours per year (hr/yr). This is less than 100 tpy and, as a result, 40 CFR 64 CAM requirements do not apply.

Hog Fuel Boiler CAM:
PM from the hog fuel boiler is the only pollutant with a control device (wet scrubber) and is therefore the only pollutant subject to CAM. Testing was performed over several years tracking the scrubber flow rate and PM emissions that helped establish a minimum scrubber flow rate to ensure compliance with the PM limit.

EU-1 Log Yard

EU-1 consists of all outdoor areas on the north side of the facility used for the handling and storage of raw logs. Raw logs are received by trucks and stacked until needed for the sawmill. Access roads to the log yard from State Route 7 and roads in the log yard are completely paved; a portion of the yard area itself is paved and a portion used for log storage is packed earth. Haul road and fugitive dust emissions are controlled by water suppression and a street sweeper. Water is applied with a water truck as necessary to minimize emissions.

The following individual pieces of equipment are associated with EU-1:

<u>Equipment</u>
One water truck
One sweeper truck
Various log trucks
Various log loaders and transports

EU-2 Saw and Planer Mills

EU-2 consists of an enclosed building and associated equipment used to produce green dimensional lumber. The sawmill is arranged in a linear configuration. Raw logs are debarked and cut to length with bucksaws. Processed logs are then cut down to standard dimensional lumber sizes through various stages of trimming, edging, and resawing. A fractionating machine is used to reduce the size of wood shavings collected by the main system cyclone, a Western Pneumatics 8' semi-long cone standard cyclone designed for 14,000 cubic feet per minute (cfm), installed in 2004. Green sawdust from sawing operations, including the planer, is either directly connected to or is collected by drag chains, and pneumatically conveyed to exterior storage bins by the Western Pneumatics baghouse rated at 42,750 acfm. Finished lumber may be color-coded and/or marked in a small paint application area prior to shipment off-site.

Emissions from the sawmill consist of fugitive PM emissions from process operations as well as non-fugitive PM emissions from the baghouse. PM collected in the baghouse is conveyed to storage bins. Bark and other streams of byproduct material are conveyed to a hogger unit and stored in an exterior bin. Other streams of unusable wood are mechanically conveyed to multiple chippers. Wood chips are mechanically conveyed to exterior storage bins prior to shipment off-site.

The following individual pieces of equipment are associated with EU-2:

<u>Equipment</u>
One debarker
Two bucksaws
One fuel hog (external)
Four chippers (three in sawmill, one in planer mill)
One sorter
Various conveyors
Various chop saws, trim saws
Various edgers
Four lumber stackers (two in sawmill, two in planer mill)
One planer
Seven two-unit bins containing wood byproducts. Bin unloading is controlled with sheeting on all bins and the addition of wet suppression (water sprays) on the shavings bins.
One Western Pneumatics 8' semi-long cone standard cyclone designed for 14,000 cfm and one Western Pneumatics Model 542 baghouse rated at 42,750 acfm are used to control sawmill and planer equipment emissions.

EU-3 Hog Fuel Boiler

EU-3 consists of one hybrid suspension grate design hog fuel boiler and associated equipment. An ABCO Industries, Inc. hog fuel boiler, rated at 40,400 pounds of steam per hour (lbs of steam/hr) and 59.6 million British thermal units per hour (MMBtu/hr) with an airflow of 22,400 dcfm, is used to generate steam for the lumber dry kilns. It was installed in 1978. The associated air pollution control equipment was installed in 2015. An air-to-air heat exchanger on the exhaust delivers preheated combustion air to the boiler. The boiler is generally fired solely

on wood byproducts from facility operations unless residuals must be purchased off-site. Fuel comprises green hog fuel from the sawmill; chips, planer shavings, sawdust, and scrap wood are also fired in the boiler, depending on required fuel characteristics.

The unit was originally reported to have a heat input capacity of 38.8 MMBtu/hr, however the original reference for this information is unknown and using the boiler's actual steam production value of 40,000 lbs of steam/hr, the heat input is more appropriately 59.6 MMBtu/hr using a 67% thermal efficiency.

PM emissions are controlled with a multiclone, to remove larger PM, followed by a Branch Environmental Corp. wet scrubber system with a variable venturi throat. Process water for the wet scrubber is conditioned with flocculant in a settling pond located adjacent to the boiler building. Water from the settling pond is recirculated to the wet scrubber. Make-up water for the settling pond is provided from boiler blowdown and the facility's main water supply.

The facility utilizes a five cubic feet (ft^3) dewatering unit to dewater the pond slurry. The water is sent back into the pond and the ash is pressed into hard cakes. The ash storage pile is covered. The ash is sent off site to be used as fertilizer.

Wood ash from the boiler is conveyed by drag chain to an exterior storage bunker.

The boiler is equipped with an oxygen meter, boiler furnace temperature gauge, and boiler steam flow rate meter. The Branch Environmental Corp. wet scrubber is equipped with a differential pressure gauge and flow meter.

The unit is subject to Title 40 CFR 63 Subpart JJJJJJ: National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources. It is an existing biomass boiler and has an oxygen trim system.

This unit is subject to the requirements of 40 CFR 64 (CAM) for emissions of PM/opacity. CAM requirements are met by implementing the CAM plan detailed in monitoring requirement M9 of the Permit.

The following individual pieces of equipment are associated with EU-3:

Equipment

One ABCO Industries, Inc. hog fuel boiler, model number 120x22HRT, serial number 77101, rated at 40,400 lbs of steam/hr and 59.6 MMBtu/hr with an airflow of 22,400 dcfm. An air-to-air heat exchanger on the exhaust delivers preheated combustion air to the boiler.

One multiclone/wet scrubber system: Exhaust from the boiler is sent through a multiclone to remove larger PM. The multiclone is followed by a Branch Environmental Corp. wet scrubber system, with variable venturi throat. According to the manufacturer, the flow rate can range from 150 gallons per minute (gpm) to 258 gpm, and the pressure can range from 15 inches water column (" w.c.) to 22" w.c. and still meet the capture efficiency. It has AIROL Chevron Mist eliminators. It is guaranteed to remove 99.5% of PM greater than 10 microns. The scrubber stack is 20 feet tall with a diameter of 41.25 inches.

One settling pond with a volume of 3,960 ft^3.

EU-4 Dry Kilns

EU-4 consists of five American Wood Dryers, Inc. model 1156 dry kilns and one Coe Manufacturing 68' double track, shop #59824, dry kiln used to dry green lumber from the sawmill. The kilns are heated exclusively with steam from the facility's hog fuel boiler. Rough sawn lumber is stacked on carts and rolled into the kilns. The American Wood Dryers have a capacity of 140,000 board feet (BF) each and the Coe Manufacturing has a capacity of 141,000 BF. The lumber is dried between 180 °F and 200 °F with a drying time of approximately 62 hours per cycle. The wood, Douglas fir, hemlock, spruce, pine, or other wood species, is dried to approximately 16% moisture content. After drying, lumber is removed from the kilns and sent to the sawmill planer or shipped rough.

Three American Wood Dryers, Inc. kilns were installed in 1978; two additional kilns were installed in 1996. The Coe Manufacturing kiln was installed in 2001.

The dry kilns have heat exchangers installed that save between 25-30% of the energy used.

The following individual pieces of equipment are associated with EU-4:

Equipment
Five American Wood Dryers, Inc. model 1156 steam heated dry kilns with a capacity of 140,000 BF each with added heat exchangers.
One Coe Manufacturing 68' double track, shop #59824, steam heated dry kiln with a capacity of 141,000 BF with added heat exchanger.

EU-5 Anti-Stain System

EU-5 consists of a TDS Technologies, Inc. anti-stain/sap stain spray system. The facility applies anti-stain to some of the green and dried lumber. The system includes a TDS Technologies, Inc., model Chem Room Z1T0083, sap stain spray system, with an airflow of 3,000 acfm and a TDS Technologies mist eliminator. Emissions from the spray enclosure are collected and vented to the mist eliminator. The mist eliminator consists of internal PVC baffles that collect the anti-stain droplets and route them back into circulation. The mist eliminator is estimated to eliminate 94% of all spray particles 12 microns or larger. The current anti-stain is Kop-Coat WORKHORSE® II, Anti-foam, and Iron FixT® 1002.

The following individual pieces of equipment are associated with EU-5:

Equipment
TDS Technologies, Inc., model Chem Room Z1T0083, sap stain spray system, with an airflow of 3,000 acfm and a TDS Technologies mist eliminator.

EU-6 Office Emergency Propane Engine

EU-6 consists of an emergency propane engine which is propane-fired. One Generac 45 kW, 60.3 hp, emergency electrical generator, that consumes 4.14-7.96 gal/hr and was manufactured in 1993. It is used to provide emergency electrical power to the office during power outages.

This emission unit is subject to the requirements of 40 CFR Part 63 Subpart ZZZZ as an existing emergency spark ignition engine.

The following individual pieces of equipment are associated with EU-6:

Equipment
One Generac propane-fired emergency electrical generator, 45 kW, 60.3 hp, generator model 93A05070-S, serial number 2011085.

EU-7 Fire Pump Emergency Diesel Engine

EU-7 consists of a fire pump emergency diesel engine. One Caterpillar diesel-fired pump engine, 225 hp, that consumes 12.1 gal/hr and was manufactured in August 1985. It is used to provide emergency electrical power to the main sprinkler house which provides emergency fire protection in the event of a power outage.

This emission unit is subject to the requirements of 40 CFR Part 63 Subpart ZZZZ as an existing emergency compression ignition engine.

The following individual pieces of equipment are associated with EU-7:

Equipment
One Caterpillar diesel-fired pump engine, 225 hp, model 3208, serial number 03Z04523.

III. EXPLANATION OF INSIGNIFICANT EMISSION UNIT DETERMINATIONS

Each emission unit listed as insignificant in the Permit application has been reviewed by SWCAA to confirm its status. Emission units determined to be insignificant by SWCAA are described as follows:

IEU-1 Welding

The permittee performs a variety of maintenance and repair activities on-site that involve metal fabrication and welding. Maintenance welding is exempt from registration according to SWCAA 400-101(4)(f) and did not require an approval. These activities consume far less than one (1) ton of welding rod per day and are deemed insignificant in accordance with WAC 173-401-533(2)(i).

IV. EXPLANATION OF SELECTED PERMIT PROVISIONS AND GENERAL TERMS AND CONDITIONS

P12. Unavoidable Excess Emissions

SWCAA 400-107 establishes criteria and procedures for determining when excess emissions are considered unavoidable. Emissions that meet the requirements to be classified as unavoidable are still considered excess emissions and are reportable but are excused and not subject to penalty. Notification of excess emissions is required as soon as possible but no later than 48 hours after discovery.

SWCAA 400-040(1)(a) approves the soot blowing and grate cleaning as necessary to the proper and efficient operation of the boiler facilities. This practice, except for testing and troubleshooting, is to be scheduled for the same approximate times each day and the Agency shall be advised of the schedule.

The provisions of SWCAA 400-107 do not apply to federal standards, such as National Emission Standards for Hazardous Air Pollutants (NESHAP)/Maximum Achievable Control Technology (MACT) standards. Such federal standards often have specific, and often more restrictive, affirmative defense provisions that only apply to malfunctions. In addition, the U.S. Court of Appeals for the D.C. Circuit in *NRDC v. EPA* (No. 10-1371) determined that EPA lacked the authority to provide an affirmative defense against suits for violations of federal standards. It holds that if EPA lacks the authority to provide this affirmative defense, state and local agencies likewise lack the same authority over federal Clean Air Act requirements. On May 22, 2015, EPA issued a SIP call to 36 states, including Washington, to modify affirmative defense provisions consistent with the *NRDC v. EPA* decision.

G14. Portable Sources

SWCAA 400-110(6) establishes procedures for approving the operation of portable sources of air emissions that locate temporarily at project sites. These requirements are general standards and apply to all portable sources of air contaminants. Common equipment subject to these conditions include emergency generators, engine-powered pumps, rock crushers, concrete batch plants, and hot mix asphalt plants that operate for a short time period at a site to fulfill the needs of a specific contract. Portable sources exempt from registration under SWCAA 400-101 are also exempt from SWCAA 400-110 and are not subject to the portable source requirements. Among those categories listed in SWCAA 400-101 that are exempt, are operations with potential to emit less than one (1) tpy of all criteria pollutants plus VOCs, combined.

V. EXPLANATION OF OPERATING TERMS AND CONDITIONS

Reqs. 1-8 General Standards for Maximum Emissions

SWCAA 400-040 establishes maximum emission standards for various air contaminants. These requirements apply to all emission units at the source, both EU and IEU. Pursuant to WAC 401-530(2)(c), the Permit does not contain any testing, monitoring, recordkeeping, or reporting requirements for IEUs, except those specifically identified by the underlying requirements.

Req. 7 prohibits any concealment or masking. At present, the permittee does not operate any equipment capable of masking emissions, therefore, monitoring is limited to the semi-annual compliance certification.

Req. 9 Area Boiler MACT General Operations of Boiler

40 CFR Part 63, Subpart JJJJJJ: §63.11205 establishes operating protocols and standards for boilers.

Req. 10 Emission Standards for Combustion and Incineration Units

SWCAA 400-050 establishes maximum emission standards for selected emissions from combustion and incineration units. These requirements apply to all combustion and incineration units at the source, both EUs and IEUs. Pursuant to WAC 401-530(2)(c), the Permit does not contain any testing, monitoring, recordkeeping, or reporting requirements for IEUs, except those specifically identified by the underlying requirements.

Req. 11 Emission Standards for General Process Units

SWCAA 400-060 establishes maximum PM emission standards for general process units. These requirements apply to all general process units at the source, both EUs and IEUs. Pursuant to WAC 401-530(2)(c), the Permit does not contain any testing, monitoring, recordkeeping, or reporting requirements for IEUs, except those specifically identified by the underlying requirements.

Req. 4, 12-27, 29-40 Air Discharge Permit for Installation of an Anti-stain System

ADP 22-3511 issued for ADP application L-724 on June 28, 2022, approved the installation of a new anti-stain system. It superseded all previous ADPs.

Req-4 requires operations that cause or contribute to a nuisance odor to use recognized good practices and procedures to reduce these odors to a reasonable minimum.

Req-12 limits opacity from the ABCO Industries hog fuel boiler to 15%. This limit was set as part of the original Best Available Control Technology (BACT) evaluation of this source. Data from the boiler source tests has shown that under proper operation the opacity can be maintained at 15% or below (not to be exceeded for more than three (3) minutes in any one hour). It also allows for higher limits during soot blowing/grate cleaning and start-up and shutdown.

Req-13 limits opacity from dry kilns to five percent (5%). This limit was set as part of the original BACT evaluation of this source. The dry kilns have indicated that while under proper operation the opacity can be maintained at five percent (5%) or below (not to be exceeded for more than three (3) minutes in any one hour).

Req-14 limits opacity from the emergency generator engine and the fire pump emergency diesel engine operations to five percent (5%). This limit was set as part of the original BACT evaluation of this source. In SWCAA's experience, diesel engines can easily meet the five percent (5%)

opacity limit (not to be exceeded for more than three (3) minutes in any one hour). It also allows for higher limits during start-up and shutdown.

Req-15 limits opacity from the hog to five percent (5%). This limit was set as part of the original BACT evaluation of this source. In SWCAA's experience, hogs can easily meet the five percent (5%) opacity limit (not to be exceeded for more than three (3) minutes in any one hour).

Req-16 limits opacity from the log yard and sawmill (except the hog) to zero percent (0%). This limit was set as part of the original BACT evaluation of these sources. In SWCAA's experience, enclosed sawmill operations of green lumber and paved log yard with wet suppression can easily meet the zero percent (0%) opacity limit (not to be exceeded for more than three (3) minutes in any one hour).

Req-17 limits emissions from the hog to the following:

PM_{10} - 0.74 tpy

The limits are established based on the amount of wood hogged and emission factors.

Req-18 limits emissions from the Western Pneumatics baghouse to the following:

PM_{10} (filterable) - 10.51 tpy; 0.005 gr/dscf (one-hour average)

The limits are established based on the rated airflow of the baghouse, hours of operation, and a concentration from the most recent emissions test.

Req-19 limits emissions from the bin unloading to the following:

PM - 27.39 tpy
PM_{10} - 16.34 tpy
$PM_{2.5}$ – 6.30 tpy

The limits are established based on types of material unloaded and SWCAA emission factors.

Req-20 limits emissions from the ABCO Industries hog fuel boiler to the following:

NO_x - 125.0 tpy, 175 ppm (one-hour average)
CO - 131.0 tpy, 300 ppm (one-hour average)
PM - 43.0 tpy, 0.050 gr/dscf (one-hour average) (filterable only for compliance)

The limits are established based on facility source tests and maximum steam flow and fuel combustion.

The ABCO Industries hog fuel boiler uses a wet scrubber to control PM emissions. These emissions could potentially exceed 100 tpy without the control equipment, therefore CAM (40 Part 64) is required for PM for this equipment.

Req-21 limits emissions from the lumber drying operations at Hampton Lumber Morton to the following:

VOC - 139.00 tpy
PM/PM_{10} - 4.30 tpy
Acetaldehyde - 9.61 tpy
Acrolein - 0.15 tpy
Formaldehyde - 0.32 tpy
Methanol - 9.27 tpy

The limits are established based on the actual type and quantity of lumber dried and emission factors.

Req-22 limits emissions from the anti-stain treatment to the following:

VOC - 0.006 tpy

The limits are established based on mass balance and maximum intended use.

Req-23 limits emissions from the office emergency propane engine to the following:

NO_X - 2.97 lb/hr and 0.30 tpy

CO - 0.23 lb/hr and 0.02 tpy

PM_{10} - 0.007 lb/hr and 0.001 tpy

The limits are established based on the amount of fuel combusted and EPA emission factors.

Req-24 limits emissions from the fire pump diesel engine to the following:

NO_X – 6.98 lb/hr and 0.70 tpy

CO – 1.50 lb/hr and 0.15 tpy

PM_{10} - 0.05 lb/hr and 0.05 tpy

The limits are established based on the amount of fuel combusted and EPA emission factors.

Req-25 requires a street sweeper to be used weekly on paved roads when significant rainfall has not occurred for 15 days or more and a watering truck to be used daily on unpaved roads when significant rainfall has not occurred for 15 days or more to minimize fugitive dust.

Req-26 requires the Western Pneumatics baghouse, ABCO Industries hog fuel boiler, and dry kilns to be discharged vertically. Any device that obstructs or prevents vertical discharge while in operation is prohibited.

Req-27 requires the Western Pneumatics baghouse to be equipped with a differential pressure gauge to indicate the pressure differential across the filtration media. The pressure drop across filtration media can be used to gauge baghouse performance and determine the baghouse bag cleaning/replacement schedule. SWCAA uses this data to assess system performance during inspections.

Req-29 requires the scrubber to be in operation at all times the ABCO Industries hog fuel boiler is operating.

Req-30 requires the water quality to be visually evaluated in accordance with Appendix E of ADP 22-3511. It also requires suspended solids testing to be conducted quarterly. This is to ensure the flocculent is adequately settling out suspended particles in the scrubber water so the solids can be removed manually on a periodic basis.

Req-31 requires scrubber water flocculent to be added to the scrubber water on a daily basis as needed. This is to settle out solids from the scrubber water and ensure that solids are not re-entrained in the scrubber water.

Req-32 provides operating parameters for the wet scrubber. The minimum differential pressure limit is 15" w.c. and the minimum process water circulation rate limit is 170 gpm. The scrubber settling pond volume must have a capacity greater or equal to 3,000 ft^3 and the deep end of the

settling pond must be at least 3 feet deep. These requirements are established to ensure proper operation of the scrubber system. Monitoring, recordkeeping, and reporting requirements were not established for the volume of the settling pond. The volume of the settling pond is ensured at the required depth of 3 feet; therefore, monitoring of the volume was limited to annual compliance certification.

The parametric limit on the scrubber pressure and process water circulation rate were determined through source testing to establish a minimum operational limit to demonstrate compliance between compliance source testing. ADP 22-3511 established the minimum process water circulation rate limit is 170 gpm; however, additional CAM compliance testing to establish a CAM indicator value, demonstrated the PM limit was obtained with a minimum process water circulation rate limit of 174 gpm as a daily average. This indicator range can be updated with further CAM compliance testing.

Req-33 requires the ABCO Industries hog fuel boiler to be equipped with an oxygen meter capable of continuously monitoring oxygen levels in the exhaust gas. Monitoring the oxygen level helps to determine proper operation.

Req-34 limits the lumber approved for drying in the kilns to Douglas fir, western hemlock, Sitka spruce, Engelmann spruce, lodgepole pine, ponderosa pine, alpine fir, grand fir, silver fir and noble fir. Lumber made from other wood species may be dried upon written approval by SWCAA. When requesting approval, the permittee must provide the following information to SWCAA:
(a) Identification of the wood species to be dried;
(b) Emission data for the specified wood species; and
(c) Expected quantity of lumber of that species to be dried.

Req-35 limits the dry kiln dry bulb set point temperature to 200 °F. This limit was established to ensure excess VOCs and TAPs are not emitted.

Req-36 requires the dry kiln doors to remain closed during the drying cycle. This is to ensure emissions are emitted vertically through the stack.

Req-37 requires all VOC containing materials to be securely closed. This is to prevent fugitive volatile emissions from anti-stain products.

Req-38 requires the emergency equipment to only be operated for manufacturer required maintenance and readiness testing and or emergencies.

Req-39 requires maintenance and readiness testing on emergency equipment to not exceed 100 hr/yr, per engine. Emergency operation is not limited. It also requires a nonresettable hourmeter to record hours.

Req-40 limits the fire pump diesel engine's fuel to #2 diesel fuel or better, not to exceed 0.0015% sulfur by weight. This is to reduce sulfur emissions. In this case, "or better" includes road-grade diesel fuel with a lower sulfur content, biodiesel, and mixtures of biodiesel and road-grade diesel that meet the definition of "diesel" and contain no more than 0.0015% sulfur by weight.

Req. 28 Area Boiler MACT Requirements

Req-28 requires a one-time energy assessment.

Req. 38-44 Engine MACT Requirements

Req-38 requires the emergency equipment to only be operated for manufacturer required maintenance and readiness testing and or emergencies.

Req-39 requires maintenance and readiness testing on emergency equipment to not exceed 100 hr/yr, per engine. Emergency operation is not limited. It also requires a nonresettable hourmeter to record hours.

Req-40 requires the fire pump diesel engine to be fired on #2 diesel fuel or better. In this case, "or better" includes road-grade diesel fuel with a lower sulfur content, biodiesel, and mixtures of biodiesel and road-grade diesel that meet the definition of "diesel" and contain no more than 0.0015% sulfur by weight.

Req-41 requires the fire pump diesel engine to be operated and maintained in accordance with the manufacturer's emission-related operation and maintenance instructions or the permittee's own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.

Req-42 establishes maintenance practices for the fire pump diesel engine.

Req-43 establishes maintenance practices for the office emergency propane engine.

Req-44 requires the permittee to minimize the time the office emergency propane engine and fire pump diesel engine spends at idle and minimize the fire pump's start-up time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.

Appendix A - Emission Testing Requirements – ABCO Boiler

The ABCO Industries hog fuel test results are required to be corrected to 7% oxygen and 3% oxygen. The 3% oxygen correction was included in ADP 22-3511 from 40 CFR Part 63, Subpart DDDDD and only applies to the carbon monoxide emissions. 40 CFR Part 63, Subpart DDDDD no longer applies to the facility.

Appendix C - Emission Testing Requirements – Western Pneumatics Baghouse

Appendix C lists the requirements for the Western Pneumatics Baghouse. EPA Method 17 was included in the list of methods available. Where particulate matter concentrations are known to be independent of temperature, it is desirable to eliminate the glass probe and the heating systems and to sample at stack temperature. This method has been previously approved to be used on this stack.

VI. EXPLANATION OF MONITORING AND RECORDKEEPING TERMS AND CONDITIONS

M1. General Recordkeeping

This recordkeeping section is taken directly from ADP 22-3511 and WAC 173-401-615(2). Recordkeeping requirements were separated into Sections (a) through (g) to organize the requirements.

M1(c) "Sampling and Emission Testing" applies to source testing reports. SWCAA expects that the only source testing to be performed will be the performance testing of EU-2, EU-3, and EU-4 during the performance demonstration detailed in M16, M17, and M18.

M2. Boiler Recordkeeping

This recordkeeping section is taken directly from 40 CFR Part 63. Recordkeeping requirements were separated into Sections (a) through (d) to organize the requirements.

M3. Visible Emissions Monitoring

This monitoring requirement is used to provide, by itself or in combination with other monitoring requirements, a reasonable assurance of compliance with the general requirements drawn from SWCAA 400 and the specific requirements drawn from ADP 22-3511. The general requirements in SWCAA 400 do not directly establish any specific regime of monitoring or recordkeeping. Consequently, SWCAA has implemented monitoring and recordkeeping requirements under the "gap filling" provisions of WAC 173-401-615 where no other monitoring is required by an applicable requirement.

M3 is designed to ensure compliance through periodic facility inspections and prompt corrective action. This requirement pertains to the visual technique for evaluating visible emissions, not the continuous monitor method. If emissions are not apparent during the initial survey, it is highly unlikely that the source is in violation of PM or opacity standards, and it is unnecessary to perform a formal Method 9 opacity observation. Demonstration of compliance is required in some cases via visible emissions evaluation.

M4. Particulate Matter Emission Monitoring

This monitoring requirement is used to provide, by itself or in combination with other monitoring requirements, a reasonable assurance of compliance with the general requirements drawn from SWCAA 400 and specific requirements drawn from ADP 22-3511. A PM exhaust standard of 0.1 gr/dscf applies to both combustion and non-combustion emission units, and 0.2 gr/dscf applies to units combusting wood. These requirements do not directly establish any specific regime of monitoring or recordkeeping. Consequently, SWCAA has implemented monitoring and recordkeeping requirements under the "gap filling" provisions of WAC 173-401-615 where no other monitoring is required by an applicable requirement.

M4 is designed to ensure compliance through periodic facility inspections and prompt corrective action. M4 requires a survey to identify potential excess PM emissions.

M5. Fugitive Emissions Monitoring

This monitoring requirement is used to provide, by itself or in combination with other monitoring requirements, a reasonable assurance of compliance with the general requirements drawn from SWCAA 400 and the specific requirement from ADP 22-3511. These precautions include utilizing equipment such as street sweepers and watering trucks on facility roads and venting dry kilns through elevated stacks. The use of the street sweepers and watering trucks shall be recorded when utilized.

Haul road emissions must be calculated using the following factors:

Activity	Mileage (miles/yr)	Pollutant	Emission Factor - Uncontrolled (lb/mile)	Control Efficiency	Emissions (tpy)
Haul Road	22,000	PM	6.06	80%	13.33
		PM_{10}	1.54	80%	3.40
		$PM_{2.5}$	0.24	80%	0.52

M5 requires the permittee to perform monthly inspections of the facility during daylight hours to identify any excess fugitive emissions, including fugitive dust.

M6. Complaint Monitoring

This monitoring requirement is used to provide, by itself or in combination with other monitoring requirements, a reasonable assurance of compliance with the general requirements drawn from SWCAA 400 and specific requirements in ADP 22-3511. ADP 22-3511 requires that operations that cause or contribute to a nuisance odor shall use recognized good practice and procedures to reduce these odors to a reasonable minimum. These requirements do not directly establish any specific regime of monitoring or recordkeeping. Consequently, SWCAA has implemented monitoring and recordkeeping requirements under the "gap filling" provisions of WAC 173-401-615 where no other monitoring is required by an applicable requirement.

M6 is designed to ensure compliance through prompt complaint response and corrective action.

M7. Compliance Certification

This monitoring requirement is used to provide, by itself or in combination with other monitoring requirements, a reasonable assurance of compliance with the requirements drawn from 40 CFR 64, WAC 173-400-040(7), SWCAA 400-040(7), and ADP 22-3511. WAC 173-400-040(7) and SWCAA 400-040(7) are general requirements which do not directly establish any specific regime of monitoring or recordkeeping. Consequently, SWCAA has implemented monitoring and recordkeeping requirements under the "gap filling" provisions of WAC 173-401-615 where no other monitoring is required by an applicable requirement.

WAC 173-400-040(7) and SWCAA 400-040(7) prohibit the concealment or masking of emissions which would otherwise violate a general standard. The permittee does not operate any equipment capable of masking emissions so semi-annual certification is deemed sufficient to ensure compliance.

ADP 22-3511 Conditions 18, 22, and 23 require the permittee to install specific equipment. Consequently, a general regime of periodic monitoring has been deemed ineffective for the purposes of assuring compliance. SWCAA has required semi-annual certification that the monitoring equipment is installed and maintained.

Source Emission Reduction Plan (SERP) No. 08-106 was issued under the requirements of WAC 173-435 and SWCAA 435. SWCAA adopted the state rule by reference on November 9, 1998. This rule requires the permittee to follow the SERP whenever an air pollution episode has been declared. It is unlikely that an episode will be declared during the term of this Permit. Consequently, a general regime of periodic monitoring has been deemed ineffective for the purposes of assuring compliance. SWCAA has required semi-annual certification that the plan will be followed if triggered.

M8. SO2 Emission Standard

This monitoring requirement is used to provide, by itself or in combination with other monitoring requirements, a reasonable assurance of compliance with the requirements drawn from WAC 173-400-040(6) and SWCAA 400-040(6), and ADP 22-3511. WAC 173-400-040(6) and SWCAA 400-040(6) limit the emission of sulfur dioxide from combustion sources to a maximum of 1,000 ppm_v corrected to a specified oxygen percentage. The hog fuel boiler at this source is only fired with hog fuel and other wood byproducts from facility operations. These fuels have extremely low fuel sulfur contents relative to other petroleum-based fuels. Based on stoichiometric analysis, it is not physically possible for the combustion sources in question to exceed the limit of 1,000 ppm_v sulfur dioxide while firing on these fuels. Monitoring has therefore been limited to certification of fuel type.

ADP 22-3511 Condition 33 requires the fire pump engine must only be fired on #2 diesel or better.

M9. Hog Fuel Boiler Operations Monitoring and Emissions and Filterable PM Compliance Assurance Monitoring

This monitoring requirement is used to provide, by itself or in combination with other monitoring requirements, a reasonable assurance of compliance with the requirements drawn from ADP 22-3511. Proper maintenance and operation of the boiler ensures reductions in emissions. PM from the hog fuel boiler is the only pollutant with a control device (wet scrubber) and is, therefore, the only pollutant subject to CAM. Testing was performed over several years tracking the scrubber flow rate and PM emissions that helped establish a minimum scrubber flow rate to ensure compliance with the PM limit. At the time of Permit issuance, the CAM indicator range for the wet scrubber was 174 gpm as a daily average; however, this indicator range can be updated with CAM compliance testing.

Emissions from boiler operations must be determined using the following methods:

Pollutant	Emission Factor	Emissions
VOC	0.017 lb/MMBtu	4.44 tpy
SO_2	0.075 lb/ton of wood	1.28 tpy

(1) NO_x and CO emissions are based on the most recent emission test and annual pounds of steam produced.
(2) PM emissions are based on the most recent grain loading emission test as measured, measured air flow, and annual hours of operation.
(3) SO_2 emissions are based on the above emission factor and tons of wood combusted.
(4) VOC emissions are based on the above emission factor, 59.6 MMBtu/hr heat input, and annual hours of operation.

M9 is designed to ensure maximum performance from the boiler, EU-3.

M10. Settling Pond Water Quality Monitoring

This monitoring requirement is used to provide, by itself or in combination with other monitoring requirements, a reasonable assurance of compliance with the requirements drawn from 40 CFR 64 and ADP 22-3511. Proper maintenance of water quality in the settling pond is essential to good PM removal by the boiler's wet scrubber because poor water quality can greatly diminish scrubber effectiveness.

M10 is designed to ensure maximum performance from the boiler's wet scrubber, EU-3, by maintaining optimum water quality in the settling pond.

ADP 22-3511 Condition 24 requires the settling pond to be of a minimum volume of 3,000 ft^3. Periodic monitoring was not required in the Permit because it is a fixed concrete structure not easily modified. SWCAA has required annual certification that the pond is of the minimum volume.

M11. Lumber Drying Operations Monitoring and Emissions

This monitoring requirement is used to provide, by itself or in combination with other monitoring requirements, a reasonable assurance of compliance with the requirements drawn from ADP 22-3511. Compliance with the specified emission limits is calculated based on lumber throughput and emission factors derived from emission testing as required in M18. A maximum temperature is specified for the lumber dry kilns in order to minimize VOC and HAP emissions.

Emissions from lumber drying should be based on the following emission factors. These emission factors are listed for 200°F. The facility can use other emission factors for other temperatures and wood species found in the SWCAA Default August 2009 document with approval from SWCAA.

Hemlock Drying

Throughput = 170,000,000 Board Feet
Maximum Kiln Temperature = 200 º F

		Emission Factors			
Pollutant	Equation	lb/MMBf	lb/yr	tpy	Emission Factor Source
PM		50.5	8,585.00	4.29	Nov. 1998 by Horizon Engineering at OSU
PM_{10}		50.5	8,585.00	4.29	Nov. 1998 by Horizon Engineering at OSU
$PM_{2.5}$		50.5	8,585.00	4.29	Nov. 1998 by Horizon Engineering at OSU
VOC	See discussion	371	63,070.00	31.54	SWCAA Default August 2009
Methanol	2.83*(T) - 457	109.0	18,530.00	9.27	SWCAA Default August 2009
Formaldehyde	0.064*(T) - 10.8	2.00	340.00	0.17	SWCAA Default August 2009
Acetaldehyde		113	19,210.00	9.61	SWCAA Default August 2009
Propionaldehyde		1.2	204.00	0.10	SWCAA Default August 2009
Acrolein		1.75	297.50	0.15	SWCAA Default August 2009
Total TAPs			38,581.50	19.29	
Total HAPs			38,581.50	19.29	

(T) is in units of degrees Fahrenheit in the equations presented in the table above.

Douglas Fir Drying

Throughput = 275,000,000 Board Feet
Maximum Kiln Temperature = 200 º F

		Emission Factors			
Pollutant	Equation	lb/MMBf	lb/yr	tpy	Emission Factor Source
PM		21	5,775.00	2.89	Nov. 1998 by Horizon Engineering at OSU
PM_{10}		21	5,775.00	2.89	Nov. 1998 by Horizon Engineering at OSU
$PM_{2.5}$		21	5,775.00	2.89	Nov. 1998 by Horizon Engineering at OSU
VOC	See discussion	1008	277,200.00	138.60	SWCAA Default August 2009
Methanol	1.45*(T) - 223	67	18,425.00	9.21	SWCAA Default August 2009
Formaldehyde	0.0495*(T) - 7.6	2.3	632.50	0.32	SWCAA Default August 2009
Acetaldehyde		49	13,475.00	6.74	SWCAA Default August 2009
Propionaldehyde		0.53	145.75	0.07	SWCAA Default August 2009
Acrolein		0.73	200.75	0.10	SWCAA Default August 2009
Total TAPs			32,879.00	16.44	
Total HAPs			32,879.00	16.44	

(T) is in units of degrees Fahrenheit in the equations presented in the table above.

Other Wood Species' Emission Factors					
	VOC (lb/MMBf)	PM (lb/MMBf)	Methanol (Lb/MMBf)	Formaldehyde (lb/MMBf)	Reference
White fir	633	50.5	221	7.1	SWCAA Default
Sitka spruce	290	50.5			HLM, OSU, 11/03
Ponderosa pine	2,596	50.5	89	3	HLM, OSU, 7/07; HEFLD, Milota, 7/06
ESLP	400	50.5	29	0.9	HLM, OSU, 2/07

M11 is designed to collect and retain process data which will then be used to calculate emissions for EU-4 and EU-9.

M12. Material Handling Operations Monitoring and Emissions

This monitoring requirement is used to provide, by itself or in combination with other monitoring requirements, a reasonable assurance of compliance with the requirements drawn from ADP 22-3511. These requirements specify numerical parameters for the proper operation of the facility's baghouse and bin unloading operations.

Emissions from the baghouse must be calculated using the most recent emission test and actual hours of operation.

Emission factors for PM and PM_{10} from bin unloading are based on information from EPA AP-42 Table 10.4-2 (7/79). The original factors provided in Table 10.4-2 have been modified subsequent to engineering review by SWCAA. The modifications are due to variations in material and emission controls. The resulting emission factors applicable to this facility are provided below. An additional emission reduction of ten percent (10%) has been applied to the base emission factors for sawdust and shavings transfer due to the use of two-sided shrouding. $PM_{2.5}$ emissions are estimated to be 23% of PM emissions (EPA PM Calculator Version 2.0 - SCC 30700899).

Material	Throughput	Pollutant	Emission Factor	Emissions
Shavings	31,100 Bdt	PM	0.59 lb/ton	9.17 tpy
		PM_{10}	0.35 lb/ton	5.44 tpy
		$PM_{2.5}$	23% PM	2.11 tpy
Green Sawdust	33,400 Bdt	PM	0.27 lb/ton	4.51 tpy
		PM_{10}	0.16 lb/ton	2.67 tpy
		$PM_{2.5}$	23% PM	1.04 tpy
Chip	85,800 Bdt	PM	0.20 lb/ton	8.58 tpy
		PM_{10}	0.12 lb/ton	5.15 tpy
		$PM_{2.5}$	23% PM	1.97 tpy
Green Hog/Bark	68,400 Bdt	PM	0.15 lb/ton	5.13 tpy
		PM_{10}	0.09 lb/ton	3.08 tpy
		$PM_{2.5}$	23% PM	1.18 tpy
Total		PM		27.39 tpy
		PM_{10}		16.34 tpy
		$PM_{2.5}$		6.30 tpy

M12 is designed to minimize emissions from the facility's baghouse, EU-2, and bin unloading.

M13. Hog Operations Monitoring and Emissions

This monitoring requirement is used to provide, by itself or in combination with other monitoring requirements, a reasonable assurance of compliance with the requirements drawn from ADP 22-3511. These requirements specify numerical parameters for the proper operation of the facility's hog operations.

Emissions from the hogging of wood material/logs/bark based on 42,000 tons of wood material//bark per year, an emission factor from EPA-454/R-95-012 "FIRE Version 5.0" of 0.35 pounds of PM per ton of wood material//bark, and a 90% control factor due to the green state of the wood are calculated to be 0.74 tons of PM per year.

M13 is designed to help calculate emissions from the facility's hog, EU-2.

M14. Anti-stain Monitoring and Emissions

The applicable requirement cited in this monitoring requirement are drawn from ADP 22-3511. Compliance with the specified emission limits is calculated based on actual anti-stain usage and safety data sheet (SDS) information. Prior approval of use of a new material is required to ensure applicable acceptable source impact levels (ASILs), as defined in WAC 173-460, are not exceeded.

Emissions from anti-stain treatment come from the usage of Kop-Coat WORKHORSE® II, Anti-foam, and Iron FixT® 1002. According to the safety data sheet (SDS) and Kop-Coat, WORKHORSE contains trace amounts of 1,4-dioxane and ethylene oxide at under 0.0001%, which are not added to the product but are contained in trace amounts in one raw material. The other two products contain no hazardous air pollutants (HAPs) or toxic air pollutants (TAPs). Emissions must be based on annual throughput and SDS information.

	Used (gal/yr)	VOC (lb/gal)	VOC (tpy)
Iron FixT		0	
Anti-foam		0	
Workhorse II	3,000	0.004	0.006
VOC (total)			0.006

M14 is designed to collect and retain process data which will then be used to calculate emissions for EU-5.

M15. Emergency Equipment Operations Monitoring and Emissions

This monitoring requirement is used to provide, by itself or in combination with other monitoring requirements, a reasonable assurance of compliance with the requirements drawn from 40 CFR 63.6655 and ADP 22-3511.

ADP 22-3511 Condition 44 requires the permittee to record hours of operation, fuel sulfur content, and any maintenance activities for the emergency equipment. The permittee must also perform monthly inspections to identify PM emission violations.

Emissions from propane engine operation are calculated based on 200 hr/yr of operation, assumed propane characteristics of 91,600 Btu/gal, 4.2 lb/gal, and a maximum of 123 ppmw sulfur (40 CFR § 79.55, TABLE F94-6), a maximum engine rating of 60.3 horsepower (hp), and factors from EPA AP-42 3.2. EPA AP-42 3.2 factors for natural gas are used because natural gas and propane are similar fuels and no other factors for propane combustion in an engine are available.

Office Power Propane Back-up Generator

Hours of Operation =	200	hours
Power Output =	60.3	bhp
Fuel Consumption Rate =	8.0	gallons per hour
Propane Heat Content =	91,500	Btu/gal for AP-42 emission factors
Propane Heat Content =	92,000	Btu/gal for 40 CFR 98 GHG emission factors
Propane Sulfur Content =	123	ppmw
Propane Density =	4.24	lbs/gallon
Fuel Consumption =	1,592	gallons per year

Pollutant	Emission Factor lb/MMBtu	Emissions lb/1,000 gal	lb/hr	tpy	Emission Factor Source
NO_X	4.08	373.3	2.97	0.30	AP-42 Sec 3.2 (7/00) - 4 stroke LB
CO	0.317	29.0	0.23	0.023	AP-42 Sec 3.2 (7/00) - 4 stroke LB
VOC	0.118	10.8	0.09	8.59E-03	AP-42 Sec 3.2 (7/00) - 4 stroke LB
SO_X as SO_2	0.01140	1.04	0.008	8.30E-04	AP-42 Sec 3.2 (7/00)
PM	0.00999	0.91	7.3E-03	7.27E-04	AP-42 Sec 3.2 (7/00)
PM_{10}	0.00999	0.91	7.3E-03	7.27E-04	AP-42 Sec 3.2 (7/00)
$PM_{2.5}$	0.00999	0.91	7.3E-03	7.27E-04	AP-42 Sec 3.2 (7/00)
Acetaldehyde	0.00836	7.6E-01	6.1E-03	6.1E-04	AP-42 Sec 3.2 (7/00)
Acrolein	0.00514	4.7E-01	3.7E-03	3.7E-04	AP-42 Sec 3.2 (7/00)
Benzene	0.00044	4.0E-02	3.2E-04	3.2E-05	AP-42 Sec 3.2 (7/00)
Ethylbenzene	0.0000397	3.6E-03	2.9E-05	2.9E-06	AP-42 Sec 3.2 (7/00)
Methanol	0.0025	2.3E-01	1.8E-03	1.8E-04	AP-42 Sec 3.2 (7/00)
Toluene	0.00041	3.7E-02	3.0E-04	3.0E-05	AP-42 Sec 3.2 (7/00)
Xylene	0.00018	1.7E-02	1.3E-04	1.3E-05	AP-42 Sec 3.2 (7/00)
			TAP/HAP Total =	1.2E-03	

Greenhouse Gases	kg/MMBtu	GWP	CO_2e lb/MMBtu	CO_2e lb/gallon	tpy, CO_2e	Emission Factor Source
CO_2	61.71	1	136.047	12.516	9.963	40 CFR 98
CH_4	0.003	25	0.165	0.015	0.012	40 CFR 98
N_2O	0.0006	298	0.394	0.036	0.029	40 CFR 98
Total GHG - CO_2e			136.607	12.568	10.004	

Emissions from diesel engine operation are calculated based on 200 hr/yr of operation, a maximum fuel sulfur content of 0.0015% sulfur by weight, a maximum engine rating of 225 hp, and applicable emission factors. Emission factors for all pollutants except SO_2 are taken from EPA AP-42, Table 3.4-1 (10/96). The emission factor for SO_2 is derived by mass balance, assuming all fuel sulfur is converted to SO_2. All PM emissions are assumed to be $PM_{2.5}$.

Fire Pump Diesel Engine

Hours of Operation =	200	hours
Power Output =	225.0	horsepower
Diesel Density =	7.206	pounds per gallon
Fuel Sulfur Content =	0.0015	% by weight
Fuel Consumption Rate =	12.1	gal/hr (estimated based on7,000 Btu/hp-hr)
Fuel Heat Content =	0.138	MMBtu/gal (for use with GHG factors from 40 CFR 98)

Pollutant	Emission Factor lb/hp-hr	Emissions lb/hr	Emissions tpy	Emission Factor Source
NO_X	0.031	6.98	0.70	AP-42 Table 3.3-1 (10/96)
CO	0.00668	1.50	0.15	AP-42 Table 3.3-1 (10/96)
VOC	0.002514	0.57	0.057	AP-42 Table 3.3-1 (10/96)
SO_X as SO_2		0.0026	2.62E-04	Mass Balance
PM	0.0022	0.50	0.050	AP-42 Table 3.3-1 (10/96)
PM_{10}	0.0022	0.50	0.050	AP-42 Table 3.3-1 (10/96)
$PM_{2.5}$	0.0022	0.50	0.050	AP-42 Table 3.3-1 (10/96)

Greenhouse Gases	kg/MMBtu	GWP	CO_2e lb/MMBtu	CO_2e lb/gallon	tpy, CO_2e	
CO_2	73.96	1	163.05	23	27	40 CFR 98
CH_4	0.003	25	0.165	0.023	0.03	40 CFR 98
N_2O	0.0006	298	0.394	0.054	0.07	40 CFR 98
Total GHG - CO_2e	73.9636		163.613	23	27	

M15 is designed to minimize emissions from the facility's emergency equipment, EU-6, and EU-7.

M16. Particulate Matter Emission Testing

This monitoring requirement is used to provide, by itself or in combination with other monitoring requirements, a reasonable assurance of compliance with the requirements drawn from ADP 22-3511. A schedule of emission testing to confirm compliance with the requirements is provided. Testing is to be conducted in accordance with ADP 22-3511, Appendix C, which prescribes sampling points, testing protocols, data reduction, and reporting formats.

The Permittee may submit a written request to SWCAA for approval of minor modifications to the requirements above or the testing schedule. Upon review of the request and in accordance with EPA delegation, SWCAA will inform the Permittee in writing of any approved modifications.

M16 is intended to supplement the routine compliance monitoring provided in M4. M16 requires testing for EU-2.

M17. Lumber Drying Emission Testing

This monitoring requirement is used to provide, by itself or in combination with other monitoring requirements, a reasonable assurance of compliance with the requirements drawn from ADP 22-3511. ADP 22-3511 Condition 46 establishes a schedule of emission testing to gather data to set the emission factors for future permitting actions. The results are not used for compliance determinations. Testing is to be conducted in accordance with the ADP 22-3511, Appendix B, which prescribes sampling points, testing protocols, data reduction, and reporting formats. It is important to note that the specified test method does not directly test the kilns. Testing is performed on wood samples in a laboratory environment. Lumber drying emissions are calculated based on lumber throughput and an emission factor established in the ADP.

The Permittee may submit a written request to SWCAA for approval of minor modifications to the requirements above or the testing schedule. Upon review of the request and in accordance with EPA delegation, SWCAA will inform the Permittee in writing of any approved modifications.

M17 is designed to provide validation of existing emission factors through periodic testing for EU-4.

M18. Boiler Emission Testing

This monitoring requirement is used to provide, by itself or in combination with other monitoring requirements, a reasonable assurance of compliance with the requirements drawn from ADP 22-3511. ADP 22-3511 Condition 45 establishes a schedule of emission testing to confirm compliance with the requirement. Testing is to be conducted in accordance with ADP 22-3511 Appendix A, which prescribes sampling points, testing protocols, data reduction, and reporting formats. 40 CFR Part 63 establishes initial and ongoing performance requirements and schedules.

The Permittee may submit a written request to SWCAA for approval of minor modifications to the requirements above or the testing schedule. Upon review of the request and in accordance with EPA delegation, SWCAA will inform the Permittee in writing of any approved modifications.

M18 is designed to demonstrate compliance through periodic testing for EU-3.

M19. Boiler Emission Monitoring

This monitoring requirement is used to provide, by itself or in combination with other monitoring requirements, a reasonable assurance of compliance with the requirements drawn from 40 CFR Part 63 and ADP 22-3511. ADP 22-3511 Condition 48 establishes a schedule of emission monitoring to confirm compliance with the requirement. Monitoring is to be conducted in accordance with 40 CFR Part 63, ADP 22-3511 Appendix D and 10-2948 Appendix B, which prescribe an emission monitoring (tune-up) schedule, sampling points, testing protocols, data reduction, and reporting formats.

Emission monitoring is an extension of proper operations and maintenance, and results are not a compliance determination.

M19 is designed to demonstrate compliance through periodic emission monitoring for EU-3.

VII. EXPLANATION OF REPORTING TERMS AND CONDITIONS

R1. Deviations from Permit Conditions

The permittee is required to report all Permit deviations. This reporting section is taken directly from WAC 173-401-615(3) and SWCAA 400-107. The permittee is required to report all Permit deviations no later than 30 days following the end of the month during which the deviation is discovered. Permit deviations due to excess emissions shall be reported to SWCAA as soon as possible but no later than 48 hours after discovery. SWCAA may request a full report of any deviation if determined necessary. These deviations are also reported in each semi-annual report.

R2. Complaint Reports

The permittee is required to report all complaints to SWCAA within three business days of receipt to ensure prompt complaint response. This reporting section is based on WAC 173-401-615(3).

R3. Semi-Annual Reports and CAM Excursions

The permittee is required to provide a report on the status of all monitoring records and provide a certification of all reports on a semi-annual basis. Semi-annual reporting and certification of monitoring records is required by WAC 173-401-615(3). CAM reporting is taken from 40 CFR 64.9. A Responsible Official must certify all reports required by the Permit.

The semi-annual report provides information on the status of all required monitoring. The actual results (e.g., measured pressure drops, opacity readings) do not need to be submitted unless specifically required by the Permit.

R4. Annual Reports

Annual Compliance Certification: The permittee is required to report and certify compliance with all Permit terms and conditions on an annual basis. Annual compliance certification is required by

SWCAA 401-630(5). Any deviations from Permit conditions or certifications of intermittent compliance need to be accompanied by an explanation.

R5. Emission Inventory Reports

The permittee is required to report an inventory of emissions from the source and certify compliance with all Permit terms and conditions on an annual basis. The annual emissions inventory must be submitted to SWCAA by March 15th for the previous calendar year, as provided in SWCAA 400-105. WAC 173-400-105 sets a later emission inventory due date of April 15th. A complete emissions inventory includes quantifiable emissions from all EUs described in Section II and the IEUs described in Section III.

R6. Source Test Reports

This reporting section is taken from SWCAA 400-106(1)(g) and ADP 22-3511 Condition 65 and Appendices A, B, C. The permittee is required to report test results within 45 days of test completion to allow timely review by SWCAA.

R7. Emission Monitoring (Tuning) Reports

This reporting section is taken from SWCAA 400-106(2)(f) and ADP 22-3511 Condition 64 and Appendix D. The permittee is required to report test results within 15 days of emission monitoring completion to allow timely review by SWCAA.

R8. MACT Records – Engine MACT (Subpart ZZZZ)

Subpart ZZZZ (Stationary Reciprocating Internal Combustion Engine [RICE] MACT) applies to stationary RICE at a major or area source of HAP emissions.

The facility is not required to submit an initial notification requirement because both units are existing stationary emergency RICE, and the office power emergency generator is less than 100 hp. The facility must submit hours of operation and the purpose of that operation annually by March 31st.

R9. MACT Records – Area Boiler MACT (Subpart JJJJJJ)

Subpart JJJJJJ (Area Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters MACT) applies to industrial, commercial, or institutional boilers or process heaters located at facilities that emit less than 10 tpy of a single HAP or 25 tpy combined HAPs.

Included are Notifications and Compliance Reports and how to submit via electronic reporting.

The facility is required to comply with the initial notification requirement for Subpart JJJJJJ and that initial notification has not yet been submitted.

VIII. EXPLANATION OF FUTURE REQUIREMENTS

1. Future Requirements

None.

IX. FACILITY HISTORY

Permit/Regulatory Order Actions
The following table lists each ADP and Consent Order(s) issued for this facility. Permits or Orders in bold contain no active requirements. The requirements may have been superseded, may have been of limited duration, or the equipment may have been removed.

Hampton Lumber Mills - Morton Facility:

Permit	ADP Application	Date Issued	Description
78-300	**L-91**	1-13-78	Installation of new ABCO Industries hog fuel boiler and associated pollution control equipment.
88-1032	**L-179**	1-19-89	Installation of a "Posi-Con" baghouse.
95-1817	**L-342**	1-8-96	Installation of two new dry kilns.
96-1951	**L-289**	11-25-96	Installation of a new Nicholson barker unit and Can-Car saw/chipper unit.
97-2034	**L-384**	9-5-97	Modification of existing emission limits for the hog fuel boiler. Superseded ADP 78-300.
01-2339	**L-478**	3-27-01	Installation of one additional Coe Manufacturing dry kiln.
01-2341		3-1-01	Consent Order for compliance with boiler emission limits.
04-2534	**L-439**	6-9-04	Update equipment parameters and establish new emission limits for the hog fuel boiler. Superseded ADPs 78-300, 88-1032, 95-1817, 96-1951, 97-2034, and 01-2339.
04-2534R1	**L-546**	11-22-04	Replacement of the Carothers Company model 386 baghouse and the H & R Mechanical Systems Posi-Con model 7210 baghouse with a new Western Pneumatics model 542 baghouse. Superseded ADP 04-2534.
08-2800		6-16-08	Consent Order for testing and compliance with boiler CO emission limits. The Order's requirements have been met.

04-2534R2	**L-643**	8-3-10	Approval to increase bin unloading throughput, increase dry kiln throughput and adjust dry kiln emission factors. Superseded ADP 04-2534R1.
15-3151	**L-682**	8-27-15	Approval to replace the existing wet scrubber with a new wet scrubber. Approves the installation of an external hog. Superseded ADP 04-2534R2.
17-3237	**L-690**	8-15-17	Approval to modify the averaging times when measuring scrubber water pressure drop, liquid flow rate, boiler steam rate, and oxygen to language that is consistent with the Boiler MACT provisions. Superseded ADP 15-3151.
22-3511	L-724	6-28-22	Approval to install a new anti-stain application system. Superseded ADP 17-3237.

Title V Permit Actions:

AOP SW97-5-R0 (original Title V Permit)
1. Final Permit Issued: January 28, 1998

AOP SW97-5-R1 (first renewal)
1. Final Permit Issued: December 3, 2009

AOP SW97-5-R2 (second renewal)
1. Final Permit Issued: May 17, 2017

AOP SW97-5-R3 (third renewal)
1. Renewal Permit Application Submitted: May 17, 2021
2. Permit Application Deemed Complete: November 17, 2021
3. Permit Application Sent to EPA: May 17, 2021
4. Draft Permit Issued: March 3, 2025
5. Proposed Permit Issued: April 9, 2025
6. Final Permit Issued: June 16, 2025

Compliance History
The following Notices of Violation (NOV) or Notice of Correction (NOC) were issued during the last Permit term (May 17, 2017, to present).

NOC/ NOV#	Violation Date	Notes
6036	2/6/2018	Exceeded filterable PM limit during a source test. Correction with a follow-up source test required to demonstrate compliance.
6038	2/7/2019	Submitted a late tune-up report. It was turned in 23 days following the tune-up. Correction.
6042	3/2/2020	Exceeded filterable PM limit during a source test. Penalty issued.

NOC/ NOV#	Violation Date	Notes
10403	3/13/2021	Submitted a late tune-up report. It was three months late. Correction.
10405	11/1/2021	Exceeded filterable PM limit during a source test. Penalty issued.
10411	10/12/2022	Exceeded filterable PM limit during a source test. Penalty issued.
10416	7/17/2023	Did not report the receipt of a complaint in a timely manner. Correction.

X. EXPLANATION OF APPENDICES

1 Appendix A - Emission Testing Requirements - ABCO Boiler

Appendix A contains the method by which the ABCO hog fuel boiler should be emission tested to determine compliance.

2 Appendix B - Emission Testing Requirements - Lumber Drying

Appendix B contains the method by which the emissions from the lumber drying operations can be quantified. This is not a compliance test.

3 Appendix C - Emission Testing Requirements – Western Pneumatics Baghouse

Appendix C contains the method by which the Western Pneumatics baghouse should be emission tested to determine compliance.

4 Appendix D - Emission Monitoring Requirements – ABCO Boiler

Appendix D contains the method by which the ABCO hog fuel boiler should be tuned to ensure proper operation in years when the boiler is not emission tested.

5 Appendix E - Scrubber Water Visual Evaluations Method

Appendix E contains the method by which the scrubber water will be visually evaluated to determine the effectiveness of flocculent addition.

XI. RESPONSE TO COMMENTS

No comments were received.