

TECHNICAL SUPPORT DOCUMENT (TSD)

AND

STATEMENT OF BASIS

RENEWAL PERMIT

K PLY

April 26, 2004

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1.0 DISCLAIMER

Information contained in this Technical Support Document and Statement of Basis is for purposes of background information only and is not enforceable. Applicable requirements including emission limits and monitoring, recordkeeping and reporting requirements are contained in K Ply's Air Operating Permit (AOP).

2.0 FACILITY DESCRIPTION

Overview

K Ply's mill in Port Angeles produces hardwood and softwood plywood products including medium density plywood overlay, high density plywood overlay, exterior siding, and interior paneling. The facility is located on the Port Angeles Harbor waterfront and first began operating in 1941 as an employee cooperative under the name Peninsula Plywood. Since June of 1989 it has been owned by Klukwan, Inc., an Alaskan Native corporation. The Responsible Official for K Ply is Ernie Van Ogle who serves as president for K Ply's mill in Port Angeles.

Process Descriptions

Log pre-processing is the initial step in making plywood. For purposes of K Ply's AOP, log pre-processing includes all operations in the log yard involved in receiving, sorting and storing logs, de-barking, cutting logs to size, sorting, green veneer peeling, chipping and hog fuel production. Log pre-processing operations cause particulate emissions comprised primarily of wood residuals and dust, and fuel combustion emissions due to use of heavy equipment such as front-end loaders and log stackers. Since there are no discrete, significant emissions units involved, log pre-processing operations are subject to just the standard and general conditions in K Ply's AOP, including a condition requiring a monthly audit of fugitive dust control measures implemented by K Ply.

K Ply's log yard is approximately 12 acres in size and is located adjacent to the harbor just North of the mill. Logs are received via truck or barge, and are sorted and stored in K Ply's log yard prior to processing them into veneer. K Ply currently operates two de-barker units, which are accounted for as part of the log yard operations in their AOP. The bark is reduced to hog fuel in one of two hogs and is transported via belt conveyor to K Ply's hog fuel pile. After debarking, the logs are cut into blocks and then peeled into veneer. K Ply has three lathes to peel blocks into undried or "green" veneer. The left-over peeler cores and wood chip residuals are sold as byproducts. The green veneer is then transported to the main mill building for drying in one of K Ply's three existing veneer dryers. Equipment and operations involved in log pre-processing and green veneer production are subject only to the general and standard conditions in K Ply's AOP, and regulated collectively in the permit as emissions unit #5 (EU5).

K Ply's three veneer dryers are indirect steam heated veneer dryers. Veneer drying results in significant emissions of particulate matter and volatile organic compounds (VOCs). The particulate matter emissions result from VOCs which condense in the exhaust to form fine particulate. The VOC emissions from veneer drying consist primarily of Terpene compounds and Phenol. Phenol is a federally listed hazardous air pollutant (HAP). No Terpenes are listed as HAPs, however, both Phenol and Terpentine are listed as Toxic Air Pollutants (TAPs) under Washington's regulations for new sources of TAPs (Chapter 173-460 WAC). Therefore, both compounds are regulated in K Ply's permit. Veneer dryers are

regulated collectively as emissions unit #1 (EU1).

Plywood panels are formed by assembling several successive layers of veneer coated with plywood resin and placing them in presses. The dried veneer is graded, patched and welded if necessary. The veneer is then assembled into sheets using a phenol-formaldehyde exterior grade glue. For “overlay” plywood, a phenolic resin-impregnated paper is used as the final surface on the plywood sheets. The assembled sheets are heated and pressed in one of the mill's three steam-powered plywood presses. Emissions of both formaldehyde and phenol result during plywood assembly, pressing and patching due to the release of uncombined formaldehyde and phenol. Plywood assembly and pressing operations are regulated collectively as emissions unit #4 (EU4).

After pressing, the plywood sheets are cut to size and graded. For certain products, the plywood is edge sealed by spray applying edge sealing paint to stacks of plywood. Edge sealing operations take place in a paint spray room. The edge sealing paint used contains minor amounts of VOCs, which are accounted for as emissions. However, the paint spray room is accounted for as an IEU.

K Ply also produces a specialty plywood product engineered specifically to be used in concrete forms. This product requires application of a special form oil to the plywood surfaces that prevents concrete bonding to the plywood. The form oil contains minor amounts of VOCs that result in emissions during the form oiling process, which are also accounted for as emissions. The specific equipment used to apply the form oil is referred to as the “form oiler.” The form oiler is accounted for as an IEU in K Ply's permit.

Wood residuals are transported throughout the mill pneumatically. Cyclones associated with the residuals transport systems exhaust directly to the atmosphere, except for the cyclones “L” and “M”, which exhaust to K Ply's only process baghouse. Cyclones and other emissions points throughout K Ply's residuals transport systems are accounted for and regulated in the AOP collectively as emissions unit #3 (EU3).

Steam is produced by two Riley, Type RO, stoker boilers with pinhole grates and combustion air supplied through the grates and side wall overfire air ports. The boilers are separate, but identical units. They share the same combustion air preheater, air pollution control system and a common stack. Air pollution control systems serving the boilers include a multiclone separator followed by a baghouse. The boilers are regulated in K Ply's AOP as emissions unit #2 (EU2).

The boilers combust wood fuel only. Most of the fuel is produced on site and consists of bark from log debarking operations and wood waste from plywood production. Wood fuel obtained on-site is augmented with purchased hog fuel as necessary. Wood dust is also occasionally burned as fuel. Since some of the logs are rafted in salt water to the mill, the hog fuel mix is periodically tested for salt content. If opacity problems can be attributed to abnormally high salt content of the hog fuel, hog fuel from a relatively clean log supply is blended into the hog fuel pile to reduce the chloride concentration of the

hog fuel mixture and alleviate the opacity problem.

The mill typically operates 24 hours a day, 5 days a week and up to 51 weeks a year. However, K Ply is not limited from operating continuously. Market conditions may dictate alternative operating schedules. The mill shuts down for maintenance every Saturday at the end of the last shift, and starts up operations the following Monday at the beginning of the first shift.

Raw Materials and Fuels

The majority of the hog fuel combusted at K Ply is hog fuel originating from on-site wood residuals. However, K Ply does purchase approximately 33% of the hog fuel consumed annually (shown separately in following table). Purchased hog fuel consists primarily of fir bark and sawdust from other local mills. Incoming hog fuel is required to be monitored by inspection of incoming loads for non-wood contamination. Conditions in the AOP require that only clean hog fuel be combusted in K Ply's hog fuel boilers. The purpose of the inspections are to assure that the incoming purchased hog fuel is free of contamination. Contaminated loads are required to be rejected.

The majority of veneer used by K Ply is produced on-site from Cottonwood, Fir, Hemlock and Cedar logs. In addition to the veneer produced on-site, K Ply purchases veneer of different species from other mills. Though previously dried, purchased veneer contains excess moisture and requires further drying in K Ply's veneer dryers. Conditions in K Ply's AOP require keeping record of the amount of veneer dried by species. This information becomes important in calculating emissions since the amount of VOC emissions varies by species of veneer dried.

Plywood resin used by K Ply is mixed on site and is comprised of a mixture of phenol and formaldehyde based resin, modal, soda ash, caustic soda and flour. K Ply purchases raw resin in bulk quantities, which is stored in a large 10,000 gallon storage tank. Resin is pumped to a mixing room where modal, soda ash, caustic soda and flour are added and mixed to form the plywood resin used.

3.0 EMISSION UNIT DESCRIPTIONS

Veneer Dryers (EU1)

K Ply has three indirect steam heated veneer dryers that are regulated collectively in the permit as emission unit #1 (EU1). The dryers rely on steam produced by K Ply's two hog fuel boilers (EU2). K Ply's ability to produce dry veneer is currently limited by the number of veneer dryers K Ply owns and K Ply's ability to produce steam. As such, VOC and particulate emissions resulting from veneer drying operations are physically limited by K Ply's steam production capabilities. The maximum production rate of all three dryers combined is approximately 20 thousand square feet of veneer, standardized to 3/8 inch thickness, per hour (20 M 3/8 ft²/hr). The dryers operate up to 24 hours a day on the week days, and up to 12 hours on Saturday. The dryers typically are not operated on Sundays.

All of the dryers are located in K Ply's main production building and emit steam and emissions uncontrolled through individual stacks. Each dryer has three emissions stacks including two drying section stacks and one cooling section stack. Exhaust from dryer leaks causes buildup of emissions within the production building, which is emitted through passive ventilating roof vents. Exhaust from the veneer dryers includes particulates, phenols and terpenes.

Dryer #1 was installed in 1946. The serial number of the unit is unknown. Dryers #2 & #3 were installed in 1941. The model and serial numbers of the units are also unknown. In 1976, under approval of NOC #113, the dryers were modified by routing exhaust gases to the boilers to be used as combustion air. The intent of this modification was both to control VOC emissions from the veneer dryers and to provide the boilers with preheated combustion air. NOC #113 was approved unconditionally. However, in 1982, ORCAA approved the removal of this control system and direct venting of veneer dryer emissions provided that the dryers could meet state general opacity standards. No additional conditions or limitations were imposed through the 1982 approval. The dryers have not been modified since this date.

The veneer dryers are subject only to the general standards for opacity and grain loading that apply to process units. For purposes of maintaining an inventory of emissions the AOP imposes a requirement to keep track of the amount of veneer dried per species.

Boilers (EU2)

K Ply produces steam heat using two Riley Model No 1423 hog fuel boilers (serial #s 1896 and 1897). The units have a combined maximum rated steam production capacity of 50,000 lbs/hr of saturated steam at 250 psi. The units burn hog fuel only. Hog fuel is produced on site and is supplemented with purchased fuel. The boilers have an estimated combined maximum heat input rate of approximately 70 million Btus/hr (MMBtu/hr) based on the maximum rated steam production capacity of the boilers and an assumed steam production efficiency. Emissions from both boilers are conducted through a common stack

referred to as stack "S2" in the AOP.

Hog fuel is the only approved fuel type for the boilers. Approved hog fuel consists of plywood panel trim, waste veneer, sander dust, and other wood waste from wood products industries. The boilers are normally operated 24 hours per day 5 1/2 days per week, 51 weeks per year. The boilers are shut down every Saturday at 3:30 PM and are started up each Sunday at 7:00 PM. A typical boiler startup scenario lasts a duration of 2 hours or until a pressure of 245 psig is reached. Boiler grates are cleaned every day at 3:00 AM and 4:00 PM. Typical grate cleaning lasts a duration of 7 to 15 minutes. Soot blowing occurs once daily between 2:00 AM and 4:00 AM and may last a duration of up to 15 minutes.

The boilers were originally installed in 1941 prior to establishment of ORCAA's Regulation 1. In 1975, K Ply modified the boilers by adding a Breslov multiclone separator and a Joy wet scrubber. This action was approved unconditionally by ORCAA on January 24, 1975, through review and approval of a NOC application (NOC not numbered). In 1987, K Ply modified the air pollution control system serving the boilers by replacing the Joy wet scrubber with a Ceilcote ionizing wet scrubber. This alteration was approved by ORCAA on March 26, 1987, through a Notice of Construction application (NOC #275, 3/26/87). ORCAA's approval of NOC #275 imposed a particulate grain loading limit of 0.08 gr/dscf.

In 2000, K Ply completed the following upgrades and modifications to boiler combustion systems and air pollution controls as approved by ORCAA through a NOC application (NOC #00NOC033, 5/1/2000):

- ◆ Replaced the existing Breslove mechanical separator with a new multiclone. The new multiclone is designed to remove 60% of the 15 micron and larger sized particles at the design air flow of 56,000 acfm.
- ◆ Installed a new combustion air pre-heater downstream from the new multiclone. The new unit pre-heats the air supply for the overfire and underfire air systems and the sanderdust injection system. Combustion air through the new pre-heater is supplied by two new fans. Each fan is 10 HP and designed for 3000 CFM at 12" SP. Each is equipped with variable speed drive and control systems to allow the boiler operator to adjust the return airflow.
- ◆ Replaced the existing 75 HP ID fan with a new 150 HP fan. The new ID fan was sized to deliver the same acfm as the old fan under the increased pressure drop caused by the new multiclone and air preheater. The new fan is equipped with an inlet vane damper for control from the boiler room.
- ◆ Replaced the existing water-cooled pinhole grates with new air-cooled pinhole grates. The new grates are venturi/pinhole types, with the small orifice facing the furnace. The new grate system is inclined at an angle of 7 degrees from the far side towards the stoker, which prevents the piling of fuel on the far side, thus reducing boiler maintenance time.
- ◆ Reconstructed the fuel spreader/stoker deflector plates to facilitate more uniform distribution of fuel on to the grates. The fuel deflector plates are actuated by an electronic timing mechanism.

NOC #00NOC033 was reviewed and approved under “Requirements for Replacement or Substantial Alteration of Emission Control Technology at an Existing Stationary Source” [WAC 173-400-114]. Though the approval did not impose any further limits on emissions, it did impose additional monitoring, recordkeeping and reporting conditions (Approval Order attached). These conditions are incorporated into K Ply’s AOP.

In 2001, K Ply replaced the Ceilcote ionizing wet scrubber with a new baghouse as approved by ORCAA through a NOC application (NOC # 01NOC168, 9\5\2001). In addition to the new baghouse, K Ply made the following improvements to pollution control systems:

- ◆ Replaced the existing ash drum serving the multiclone new, fully enclosed ash “dump box”.
- ◆ Installed a new ash transport system consisting of two new enclosed screw conveyors, which will transport ash from both the multiclone and new baghouse to the new ash dump box.
- ◆ Installed a new air-to-air heat exchanger for purposes of cooling the exhaust gases to an acceptable temperature prior to the baghouse.

NOC #01NOC168 was reviewed and approved under “Requirements for Replacement or Substantial Alteration of Emission Control Technology at an Existing Stationary Source” [WAC 173-400-114]. ORCAA’s approval of this NOC did not impose any further emissions limitations, but did impose the additional compliance assurance and monitoring, recordkeeping and reporting conditions (Approval Order attached). These conditions are incorporated into K Ply’s AOP.

Material Transport Systems (EU3)

Cyclones and other emissions points throughout K Ply’s residuals transport systems are accounted for and regulated in the AOP collectively as emissions unit #3 (EU3). K Ply currently has 12 cyclones and one process baghouse (see Table 3.1 below). Mill cyclones are described collectively but are numbered individually as EU3-A through EU3-M for purposes of distinguishing one from another. Please note that EU3-C and EU3-G are left out of this numbering sequence since they have been taken out of operation. Cyclones, EU3-L and EU3-M are controlled by K Ply’s process baghouse. Also note that cyclones EU3-H and EU3-J are both composed of two identical cyclones. Mill cyclones operate as needed when connected equipment is operating. Operating schedules for mill cyclones are summarized in the inventory report submitted each year to OAPCA. All material transport systems and associated cyclones and baghouses at K Ply pre-date ORCAA’s NSR regulations and are, therefore subject only to the state and ORCAA’s general standards for maximum emissions.

Plywood Assembly and Pressing (EU4)

In the presses, heat and pressure cause the resin to cure and the panel is formed. Formaldehyde and phenol in the resin is emitted during pressing operations. K Ply has three presses located in the main production building. Emissions from the presses are not

captured, but allowed to escape through the sides of the presses. Due to natural convection, emissions rise into penthouses located directly above each press, and exhaust to the outside air via passive rooftop vents. There are no associated emission controls. Plywood fabrication using phenol-formaldehyde based resin has been a part of the operations at K Ply since 1941 and are subject only to ORCAA's and the State's general standards for maximum emissions.

Log Pre-Processing (EU5)

Log pre-processing operations include activities in the log yard, de-barking, cutting logs to size, sorting, green veneer peeling, chipping and hog fuel production. Log pre-processing operations are subject only to ORCAA's and the State's general standards for maximum emissions including requirements for fugitive dust sources. Minimum measures for controlling fugitive dust in K Ply's log yard are described in the AOP.

TABLE 3.1 EMISSION UNIT SUMMARY

Emission Unit #	Description	Control Equipment/Techniques	NOC
EU1: Veneer Dryers	<ul style="list-style-type: none"> ● 3 units: #1, #2, and #3. ● Indirect steam dryers ● Located in the main mill warehouse. ● 3 stacks each. ● Additional roof vents on building to exhaust fugitives. ● total of #1,#2&3 rate = 20 M 3/8 sqft/hr. 	Emissions uncontrolled.	#2 Constructed in 1941 ¹ #1 Constructed in 1946 ¹ NOC #113 (5/6/76) ²
EU2: Boilers	<ul style="list-style-type: none"> ● Two identical steam boilers ● Riley Model #1423 ● Serial #s 1896 & 1897 ● Primary fuel = hog fuel 	<ul style="list-style-type: none"> ● Multiclone. ● Baghouse ● Minimize use of salt laden fuel. 	Constructed in 1941 NOC (1/24/75) ¹ NOC #275 (3/26/87) ³ NOC #033 (5/1/2000) ⁴ NOC #168 (9/5/2001) ⁶
EU3-A	Cyclone: * serving plywood patcher (skoogs), core saw, and band saw: * 50 hp * 14218 scfm	none	NOC #137 (6/76) ⁵
EU3-B	Cyclone: * serving plywood patcher (skoogs) * 40 hp * 8832 scfm	none	NOC #137 (6/76) ⁵
EU3-D	Cyclone: * serving brush machine, globe saw, skinner saw, and #3 curline: * 75 hp * 21433 scfm	none	NOC #137 (6/76) ⁵
EU3-E	Cyclone: * serving mill hog * 75 hp * 21,433 scfm	none	NOC #137 (6/76) ⁵
EU3-F	Cyclone: * secondary cyclone for catch stream of EU3-A, B, D, and E * 10 hp * 5,184 scfm	none	NOC #137 (6/76) ⁵
EU3-H	Cyclone (2 identical): * serves COE lathe chipper * 7.5 hp each * 1,500 scfm each	none	NOC #137 (6/76) ⁵
EU3-J	Cyclone (2 identical): * serves Bamford chipper	none	NOC #137 (6/76) ⁵

Emission Unit #	Description	Control Equipment/Techniques	NOC
	* 7.5 hp each * 1,500 scfm each		
EU3-K	Cyclone: * serves sander, scarfer, and jenkins * 75 hp * 6,019 scfm	none	NOC #137 (6/76) ⁵
EU3-L	Cyclone: * secondary cyclone for catch stream EU3-F, H, and J * 40 hp * 8,832 scfm	process baghouse	NOC #137, (6/76) ⁵
EU3-M	Cyclone: * secondary cyclone for catch stream off EU3-K * 75 hp * 22,230	process baghouse	NOC #137 (6/76) ⁵
EU4	Plywood layup and pressing: * 3 presses total * steam driven * phenol/formaldehyde based glues and resins used	none	built, 1941 ¹
EU5	Log yard De-barking Chipping & grinding Log trimming Veneer cutting	1. Using street sweeper on paved areas as needed. 2. Water suppression on unpaved haul roads. 3. Scrapping log yard only during wet conditions.	established, 1941 ¹

Notes/Codes for Table 3.1:

EU - Emission unit

na - not applicable.

AO - Approval order issued by OAPCA.

(1) - Grandfathered in under NSR and NOC requirements.

(2) - NOC approval no longer applies due to issuance of a later approval order.

(3) - NOC for boiler, dryer and cyclones. Approval was unconditional. Application is not specific.

(4) - NOC associated with scrubber replacement. Reviewed as replacement or substantial alteration of pollution control device. Emission limit established in accordance with this approval.

(5) - NOC approval unconditional. NOC application contains specific information on mill cyclones.

(6) – NOC approval to modify combustion systems on both boilers (5/1/2000)

TABLE 3.2 INSIGNIFICANT EMISSIONS UNITS:

IEU Name	Size/Capacity	Basis for IEU Designation
diesel tank	10,000 gallons	WAC 173-401-533 (c)
propane tank	40,000 gallons	WAC 173-401-533 (d)
welding operations and mill maintenance operations	welding stations solvent tanks	WAC 173-401-532 (12)&(33)
caustic soda tank (aqueous solution)	na	WAC 173-401-532 (4)
Edge sealing paint booth	na	WAC 173-401-532 (33)
mill pond (used to settle waste water)	na	WAC 173-401-533 (m)
Panel Oiler	na	WAC 173-401-532 (33)

4.0 ACTUAL AND POTENTIAL EMISSIONS

Annual actual emissions will vary from year to year based on operational conditions at the facility. Data presented below in Table 4.1 is from the 2002 Annual Emission Inventory submitted to ORCAA by K Ply in Spring 2003. The actual emissions reflect the actual fuel used and production quantities that occurred during 2002. Data presented below in Table 4.2 reflect K Ply's potential to emit (PTE) HAP. K Ply's PTE was estimated based on K Ply's maximum steam production capabilities and HAP emission factors from EPA's Compilation of Air Pollutant Emission Factors (AP-42).

TABLE 4.1 2002 ACTUAL EMISSIONS

Pollutant	2002 Emissions (tons)	Source of Data
CO (Carbon Monoxide)	860	ORCAA Inventory
PM (Total Particulate)	104	ORCAA Inventory
PM 2.5 (Fine Particulate (<= 2.5 microns))	49	ORCAA Inventory
PM-10 (Fine Particulate (<=10 microns))	49	ORCAA Inventory
VOC as Propane	23	ORCAA Inventory
NOX (Nitrogen Oxides)	16	ORCAA Inventory
VOC as Volatile Organic Compounds	6	ORCAA Inventory
SO2 (Sulfur Dioxide)	2	ORCAA Inventory
CARBON DIOXIDE	25,085	ORCAA Inventory
METHANE	3	ORCAA Inventory
PHENOL (highest HAP)	3	ORCAA Inventory
Total HAP	10	ORCAA Inventory
Total TAP	12	ORCAA Inventory

TABLE 4.2 POTENTIAL HAP EMISSIONS (PTE)

Pollutant	PTE (tons)	Source of Data
Acetaldehyde	0.9	ORCAA Inventory
Formaldehyde	2.4	ORCAA Inventory
Methanol	1.0	ORCAA Inventory
Phenol	3.9	ORCAA Inventory
Total HAPs	12.7	ORCAA Inventory

5.0 REGULATORY DETERMINATIONS

5.1 National Emissions Standards for Hazardous Air Pollutants (NESHAP)

Two proposed NESHAP standards for 40 CFR Part 63 are potentially applicable to equipment and operations at plywood manufacturing facilities: The proposed Plywood and Composite Wood Products NESHAP (Plywood NESHAP); and, The Industrial/Commercial/Institutional Boilers and Process Heaters NESHAP (Boiler NESHAP). The boiler NESHAP will apply to industrial, commercial or institutional boilers and process heaters located at, or part of, a major source of HAP emissions. The Plywood NESHAP will apply to plywood and composite wood products manufacturing facilities located at, or part of, a major source of HAP emissions. Therefore, applicability of both proposed NESHAP to K Ply is dependent on whether or not K Ply is a major source of HAP emissions.

A major source of HAP emissions is any stationary source or group of stationary sources within a contiguous area and under common control that emits or has the potential to emit any single HAP at a rate of 10 tons or more per year or any combination of HAP at a rate of 25 tons or more per year. As shown in Table 4.2 above, K Ply's PTE for total combined HAP is less than 25 tons per year. Likewise, K Ply's PTE for any single HAP is less than the 10 ton per year threshold (Emission calculations are provided in Attachment 2). Therefore, based on the current applicability thresholds of these proposed NESHAP, neither would apply to K Ply.

5.2 New Source Performance Standards (NSPS)

NSPS, located in Part 60 of the Code of Federal Regulations (40 CFR Part 60), impose criteria pollutant emission standards to new, modified or reconstructed stationary sources of certain source categories. The NSPS for Small Industrial-Commercial-Institutional Steam Generating Units in Subpart Dc (Subpart Dc) applies to steam generating units with heat input rates less than 100 MMBtu/hr but greater than 10 MMBtu/hr for which construction, modification or reconstruction is commenced after June 9, 1989. The NSPS for Industrial-Commercial-Institutional Steam Generating Units in Subpart Db (Subpart Db) applies to steam generating units with heat input rates of 100 MMBtu/hr or greater for

which construction, modification or reconstruction commenced after June 19, 1984.

K Ply's boilers each have a heat input rate in the 10 to 100 MMBtu/hr range. Therefore, Subpart Db categorically does not apply. K Ply's boilers were constructed in 1941. Though the boilers have been modified since being built, ORCAA does not have any record of the boilers being modified or reconstructed since the applicability date for Subpart Dc (June 9, 1989). The boiler modifications completed in 2000 and 2001 (see Section 3) did not constitute a modification as defined in Subpart Dc. Therefore, Subpart Dc has not yet been triggered and does not apply at this time.

5.5 Compliance Assurance Monitoring (CAM) Rule

The CAM rule under 40 CFR Part 64 applies to K Ply's boilers since:

1. The boilers are subject to a particulate emissions limitation;
2. The boilers use a control device to achieve compliance with the limitation; and,
3. The pre-control particulate emissions from the boilers is greater than 100 tons per year.

CAM requirements are incorporated into K Ply's permit through conditions 5.2(l), 5.2(m), 6.8, 7.3, 7.11, and 8.4. The following table provides a cross reference of CAM requirements with conditions in K Ply's AOP.

TABLE 5.1 CAM Permit Conditions

CAM Requirement Citation	Requirement	AOP Condition
§64.3(a)	General criteria (CAM)	6.8, Table 6.2
§64.3(b)	Performance criteria (CAM)	6.8, Table 6.2
§64.6(c)	Permit requirements	6.8
§64.7(a)	Commencement of Operation. The owner or operator shall conduct the monitoring required under this part upon issuance of a part 70 or 71 permit...	6.8(a)
§64.7(b)	Proper Maintenance. At all times the owner or operator shall maintain the monitoring, including but not limited to maintaining necessary parts for routine repairs...	5.2(l)
§64.7(c)	Continued Operation. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities... the owner or operator shall conduct all monitoring in continuous operation...	6.8(b)
§64.7(c)	... Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part...	6.8(c)
§64.7(d)	Upon detecting an excursion or exceedance, the owner or operator shall restore operation of the pollutant-specific emissions unit (including the control device) to its normal or usual manner of operation...	5.2(m)
§64.7(e)	Documentation of need for improved monitoring.	8.7
§64.8	Quality Improvement Plan Required	2.24
§64.9(a)	General reporting requirements.	8.4

CAM Requirement Citation	Requirement	AOP Condition
§64.9(b)	General recordkeeping.	7.10; 7.11; 7.12

6.0 NOTICES OF CONSTRUCTION

The following table provides a summary of conditions from Notice of Construction (NOC) Approval Orders issued to K Ply. The right hand column in the table indicates whether the condition is an ongoing applicable requirement for K Ply and, if so, the corresponding condition # in the AOP. Records on file with ORCAA indicate that all past modifications at K Ply have complied with state, federal and local new source review requirements including Prevention of Significant Deterioration (PSD) permitting requirements.

TABLE 6.1 SUMMARY OF AIR REGULATORY HISTORY

NOC # (date)	NOC CONDITION	DESCRIPTION (for information only)	APPLICABILITY AOP CONDITION #
NOC #275 (3/26/87).	1	EU2, Particulate Limit: Particulate emissions from EU2, the hog fuel boilers, shall not exceed 0.08 gr/dscf, corrected to 12% carbon dioxide.	Applicable emissions limit. AOP condition 5.2(b)
NOC #275 (3/26/87).	2	EU2, Fuel Specifications: Only clean hog fuel consisting of plywood panel trim, waste veneer, sander dust, and other wood waste from wood products industries shall be burned in EU2. Clean hog fuel for purposes of this condition shall meet the following criteria: <ul style="list-style-type: none"> a) Derived from wood and is of a suitable size and moisture content to sustain adequate combustion; b) Is free of contamination including, but not limited to, non-wood man-made materials, painted wood, wood treated with creosote or other wood preservatives, wood from construction/demolition activities, and wood contaminated with petroleum products; and, c) Does not contain chloride above concentrations which may cause opacity violations. 	Applicable compliance assurance requirement. AOP condition 5.2(c)
00NOC033 (5/1/00)	1	Multiclone Monitoring: The multiclone shall be equipped with a device to continuously measure the pressure drop. Pressure drop across the multiclone shall be monitored by K Ply and recorded at an hourly frequency when the boilers are operating.	Applicable monitoring requirement. AOP condition #6.8
	2	Air Preheater Monitoring: The air preheater shall be equipped with devices to continuously measure pressure drops and temperatures across the pre-heater in both the exhaust stream and the combustion air stream. Pressure drops and temperatures shall be monitored and recorded at an hourly frequency when the boilers are operating.	Applicable monitoring requirement. AOP condition 6.8

NOC # (date)	NOC CONDITION	DESCRIPTION (for information only)	APPLICABILITY AOP CONDITION #
	3	<p>Additional Multiclone Specifications: The multiclone shall be equipped as follows: A suitable solids discharge valve to prevent air infiltration into the unit; A hopper high level detector and alarm; Solids storage containers of sufficient number and capacity to prevent fugitive dust from spilling on the ground or becoming airborne</p>	Equipment specification.

TABLE 6.1 SUMMARY OF AIR REGULATORY HISTORY (continued)

NOC # (date)	NOC CONDITION	DESCRIPTION (for information only)	APPLICABILITY AOP CONDITION #
01NOC168 (9/5/01)	1	<p>Operation and Maintenance Plan for the Boiler Baghouse: The permittee shall develop and implement an Operations and Maintenance (O&M) plan for maintaining the baghouse in good operating condition and repair. The O&M plan shall be written and copies shall be available at the boiler control room. At a minimum, the baghouse O&M plan shall contain the following provisions:</p> <ul style="list-style-type: none"> a) Instructions for calibrating, maintaining and operating the “bag break” detector; b) Definition or method for determining the output level from the bag break detector, which constitutes a “bag failure”; c) Prescribed actions when a bag break is detected; d) Description of baghouse recordkeeping requirements; e) Definition of action level for pressure drop across the baghouse; f) Definition of action level for reverse pulse cleaning pressure; g) Description of scheduled baghouse maintenance activities; h) Standard procedures for episodes when the baghouse is bypassed; and, i) Startup and shutdown procedures. 	<p>Applicable compliance assurance requirement.</p> <p>AOP condition 5.2(g)</p>
	2	<p>Boiler Baghouse Monitoring: The following parameters shall be continuously monitored: Pressure drop across the baghouse; Reverse air pressure used for bag cleaning; Baghouse inlet temperature; Stack temperature; and, Output from the “bag break” detector (particulate sensor).</p>	<p>Applicable monitoring requirement.</p> <p>AOP condition 6.8</p>

NOC # (date)	NOC CONDITION	DESCRIPTION (for information only)	APPLICABILITY AOP CONDITION #
	3	<p>Boiler Baghouse Recordkeeping: The following records shall be maintained: Output from the bag break detector system shall be recorded continuously; Pressure drop across the baghouse, baghouse inlet temperature, and baghouse reverse pulse cleaning pressure shall be recorded at the beginning of each shift; and, Date, time, and duration of time the boilers emitted through the bypass stack shall be recorded each shift. For purposes of this condition, the term "shift" shall mean an eight hour work duty assigned to one or more boiler operators.</p>	<p>Applicable recordkeeping requirement. AOP condition 7.3</p>
	4	<p>Bypass Limitation: The boilers may exhaust through the bypass stack only during start-up, or for a limited period of time in response to an emergency situation. Shutdown of the boilers shall be initiated within one hour after the baghouse is bypassed, or if the baghouse emissions monitoring system detects bag failure.</p>	<p>Applicable compliance assurance condition. AOP condition 5.2(j)</p>

7.0 STATEMENT OF BASIS

The following table provides the regulatory basis for each permit condition.

TABLE 7.1 STATEMENT OF BASIS

CONDITION	REGULATORY BASIS
2.1 Duty to comply.	Standard Term or Condition Authority: WAC 173-401-620(2)(a)
2.2 Duty to Provide Information.	Standard Term or Condition Authority: WAC 173-401-620(2)(e)
2.3 Need to Halt or Reduce Activity Not a Defense.	Standard Term or Condition Authority: WAC 173-401-620(2)(b)
2.4 Property Rights.	Standard Term or Condition Authority: WAC 173-620(2)(d)
2.5 Annual Fees.	Standard Term or Condition Authority: WAC 173-401-620(2)(f) ORCAA 1.6
2.6 Severability.	Standard Term or Condition Authority: WAC 173-620(2)(h)
2.7 Federally Enforceable Requirements	Standard Term or Condition Authority: WAC 173-401-625
2.8 Permit Actions.	Standard Term or Condition Authority: WAC 173-401-620(2)(c)
2.9 Permit Appeals.	Standard Term or Condition Authority: WAC 173-401-620(2)(i)
2.10 Permit Renewal and Expiration.	Standard Term or Condition Authority: WAC 173-401-705, WAC 173-401-610 and 620(2)(j)
2.11 Duty to Supplement or Correct Application.	Standard Term or Condition Authority: WAC 173-401-500(6)
2.12 Reopening for Cause.	Standard Term or Condition Authority: WAC 173-401-730
2.13 Changes Requiring Permit Revision/Off Permit Changes.	Standard Term or Condition Authority: WAC 173-401-722; WAC 173-401-724
2.14 Permit Modifications.	Standard Term or Condition Authority: WAC 173-401-720; WAC 173-401-725
2.15 Emission Trading.	Standard Term or Condition Authority: WAC 173-401-620(2)(g)
2.16 Compliance Maintenance.	Standard Term or Condition Authority: WAC 173-401-630(3)
2.17 False or Misleading Statements .	Standard Term or Condition Authority: State/Local Only: ORCAA 1.3.07; WAC 173-400-105(7)
2.18 Inspection and Entry.	Standard Term or Condition Authority: WAC 173-401-630(2)
2.19 Access for Inspection	Standard Term or Condition Authority: Local Only: ORCAA 1.3.01(e)
2.20 Source Testing	Standard Term or Condition

CONDITION	REGULATORY BASIS
	Authority: WAC 173-400-105(4) Local Only: ORCAA 1.3.01(j)
2.21 Credible Evidence	Standard Term or Condition Authority: 40 CFR 51.212; 40 CFR 52.12; 40 CFR 53.33; 40 CFR 60.11; 40 CFR 61.12
2.22 Emergency as Affirmative Defense.	Standard Term or Condition Authority: WAC 173-401-645(2)&(5)
2.23 Unavoidable Excess Emissions Excused.	Standard Term or Condition Authority: WAC 173-400-107; ORCAA 1.9.15
2.24 Quality Improvement Plan Required	40 CFR Part 64, §64.8
3.1 New Source Review	Actions Requiring Prior Approval Authority: WAC 173-400-110 ORCAA 1.7
3.2 Replacement or Substantial Alteration of Existing Control Equipment	Actions Requiring Prior Approval Authority State/Local Only: WAC 173-400-114; ORCAA 1.7.19
3.3 Demolition and Asbestos Projects.	Actions Requiring Prior Approval Authority Local Only: ORCAA 1.14.05
3.4 Demolition and Renovation Projects	Actions Requiring Prior Approval Authority: 40 CFR 61.145(b)
3.5 Temporary Sources	Actions Requiring Prior Approval Authority: ORCAA 1.7.01; ORCAA 1.7; WAC 173-401-635
3.6 MACT	40 CFR 63.42(c)
4.1 Demolition and Renovation Projects	Facility-Wide & General Applicable Requirement Authority: 40 CFR 61.145(b)
4.2 Demolition and Asbestos Projects	Facility-Wide & General Applicable Requirement Authority Local Only: ORCAA 1.14.05
4.3 Protection of Stratospheric Ozone, Servicing of Motor Vehicle Air Conditioners	Facility-Wide & General Applicable Requirement Authority: 40 CFR 82.32; 40 CFR 82.34; 40 CFR 82.42(a)-(b)
4.4 Protection of Stratospheric Ozone, Recycling and Emission Reductions	Facility-Wide & General Applicable Requirement Authority: 40 CFR 82.152; 40 CFR 82.156; 40 CFR 82.158; 40 CFR 82.161; 40 CFR 82.166
4.5 Protection of Stratospheric Ozone, Significant New Alternatives Policy Program	Facility-Wide & General Applicable Requirement Authority: 40 CFR 82.174
4.6 Protection of Stratospheric Ozone, Halon Emissions Reduction	Facility-Wide & General Applicable Requirement Authority: 40 CFR 82.260; 40 CFR 82.270(b); 40 CFR 82.270(d); 40 CFR 82.270(e); 40 CFR 82.270(f)
4.7 Emissions Detrimental to Persons or Property	Facility-Wide & General Applicable Requirement Authority: WAC 173-400-040(5)
4.8 Emissions Detrimental to Persons or Property	Facility-Wide & General Applicable Requirement Authority Local Only: ORCAA 1.9.23
4.9 Fallout	Facility-Wide & General Applicable Requirement Authority Local Only: ORCAA 1.9.05(e)
4.10 Fallout	Facility-Wide & General Applicable Requirement Authority: WAC 173-400-040(2)

CONDITION	REGULATORY BASIS
4.11 Odors (State)	Facility-Wide & General Applicable Requirement Authority State/Local Only : WAC 173-400-040(4)
4.12 Odors (ORCAA)	Facility-Wide & General Applicable Requirement Authority Local Only : ORCAA 1.9.11(c)
4.13 Fugitive Emissions Control	Facility-Wide & General Applicable Requirement Authority: WAC 173-400-040(3)(a)
4.14 Fugitive Dust Control	Facility-Wide & General Applicable Requirement Authority: WAC 173-400-040(8)(a)
4.15 Fugitive Dust Control	Facility-Wide & General Applicable Requirement Authority Local Only : ORCAA 1.9.05(c)
4.16 Concealment and Masking	Facility-Wide & General Applicable Requirement Authority: WAC 173-400-040(7)
4.17 Concealment and Masking	Facility-Wide & General Applicable Requirement Authority Local Only : ORCAA 1.9.12
4.18 Maintenance and Repair of Air Pollution Control Equipment and Processes	Facility-Wide & General Applicable Requirement Authority: ORCAA 1.9.16
4.19 General Standards for Maximum Visual Emissions	Facility-Wide & General Applicable Requirement Authority Local Only : ORCAA 1.9.03
4.20 Visible Emissions	Facility-Wide & General Applicable Requirement Authority: WAC 173-400-040(1)
4.21 Sulfur Dioxide	Facility-Wide & General Applicable Requirement Authority: WAC 173-400-040(6)
4.22 General Particulate Standards for Combustion Units	Facility-Wide & General Applicable Requirement Authority: WAC 173-400-050(1)
4.23 General Particulate Standards for Process and Combustion Units	Facility-Wide & General Applicable Requirement Authority Local Only : ORCAA 1.9.05(a)
4.24 General Emission Standards for Process Units	Facility-Wide & General Applicable Requirement Authority: WAC 173-400-060
5.1(a) Maintenance and Repair of EU1 Air Pollution Control Equipment and Processes	Equipment Specific Conditions Authority: ORCAA 1.9.16 WAC 173-401-600(1) & (2)
5.2(a) Emission Standards for Hog Fuel Boilers	Equipment Specific Conditions Authority: WAC 173-400-070(2)
5.2(b) EU2, Particulate Limit	Equipment Specific Conditions Authority: NOC #275 (3/26/87).
5.2(c) EU2, Fuel Specifications	Equipment Specific Conditions Authority: NOC #275 (3/26/87)
5.2(d) Multiclone Monitoring	Equipment Specific Conditions Authority: 00NOC033 (5/1/00) condition 1
5.2(e) Air Preheater Monitoring	Equipment Specific Conditions Authority: 00NOC033 (5/1/00) condition 2
5.2(f) Additional Multiclone Specifications	Equipment Specific Conditions Authority: 00NOC033 (5/1/00)

CONDITION	REGULATORY BASIS
	condition 3
5.2(g) Operation and Maintenance Plan for the Boiler Baghouse	Equipment Specific Conditions Authority: 01NOC168 (9/5/01) condition 1
5.2(h) Boiler Baghouse Monitoring	Equipment Specific Conditions Authority: 01NOC168 (9/5/01) condition 2
5.2(i) Boiler Baghouse Recordkeeping	Equipment Specific Conditions Authority: 01NOC168 (9/5/01) condition 3
5.2(j) Boiler Baghouse Bypass Limitation	Equipment Specific Conditions Authority: 01NOC168 (9/5/01) condition 4
5.2(k) Maintenance and Repair of EU2 Air Pollution Control Equipment and Processes	Equipment Specific Conditions Authority: Local Only: ORCAA 1.9.16 WAC 173-401-600(1) & (2)
5.2(l) Proper Maintenance of Monitoring Systems	Equipment Specific Conditions Authority: 40 CFR Part 64 §64.7(b)
5.2(m) Response to Excursions or Exceedances	Equipment Specific Conditions Authority: 40 CFR Part 64 §64.7(d)
6.1 Opacity Surveys	Compliance Monitoring Conditions Authority: WAC 173-401-615(1)(b)
6.2 Certified Opacity Reading Required	Compliance Monitoring Conditions Authority: WAC 173-401-615(1)(b)
6.3 Certified Opacity Reading Procedures	Compliance Monitoring Conditions Authority: WAC 173-401-615(1)(b)
6.4 Monitoring Air Impacts Which are Detrimental or a Nuisance to Persons or Property	Compliance Monitoring Conditions Authority: WAC 173-401-615(1)(b)
6.5 Fugitive Emissions and Dust Control Monitoring	Compliance Monitoring Conditions Authority: WAC 173-401-615(1)(b)
6.6 Sulfur Dioxide Emissions Monitoring	Compliance Monitoring Conditions Authority: WAC 173-401-615(1)(b)
6.7 Pollution Control Equipment Monitoring	Compliance Monitoring Conditions Authority: WAC 173-401-615(1)(b)
6.8 EU2 Compliance Assurance Monitoring	Compliance Monitoring Conditions Authority: WAC 173-401-615(1)(b); 40 CFR Part 64; 00NOC033 (5/1/00); 01NOC168 (9/5/01)
6.9 Particulate Testing Required	Compliance Monitoring Conditions Authority: WAC 173-401-615(1)(b)
6.10 Steam Monitoring	Compliance Monitoring Conditions Authority: WAC 173-401-615(1)(b)
6.11 Veneer Monitoring	Compliance Monitoring Conditions Authority: WAC 173-401-615(1)(b)
6.12 Materials Monitoring	Compliance Monitoring Conditions Authority: WAC 173-401-615(1)(b)

CONDITION	REGULATORY BASIS
6.13 VOC Emissions Monitoring	Compliance Monitoring Conditions Authority: WAC 173-401-615(1)(b)
6.14 Hog Fuel Monitoring	Compliance Monitoring Conditions Authority: WAC 173-401-615(1)(b)
7.1 Retention and Availability of Records.	Recordkeeping Authority: WAC 173-401-615 (2)(a); §64.9(b); 01NOC168 (9/5/01)
7.2 Record of Changes.	Recordkeeping Authority: WAC 173-401-615 (2)(b)
7.3 Monitoring Records.	Recordkeeping Authority: WAC 173-401-615 (2)(a); §64.9(b); 01NOC168 (9/5/01)
7.4 Record of Permit Deviations.	Recordkeeping Authority: WAC 173-401-615(3)(b)
7.5 Availability of Emissions Records	Recordkeeping Authority Local Only : ORCAA 1.13.02(b)
7.6 Emissions Records	Recordkeeping Authority: WAC 173-400-105(1); ORCAA 1.13.02(a)
7.7 Unlawful Reproduction or Alteration of Documents.	Recordkeeping Authority Local Only : ORCAA 1.3.09
7.8 Display of Orders, Certificates and Other Notices.	Recordkeeping Authority Local Only : ORCAA 1.3.11
7.9 Record of Complaints.	Recordkeeping Authority: WAC 173-401-615(1)(b)&(2)
7.10 Record of Actions Taken	Recordkeeping Authority: WAC 173-401-615(2)(a); §64.9(b)(1)
7.11 Paperless Records	Recordkeeping Authority: §64.9(b)(2)
7.12 Startup/Shutdown Records	Recordkeeping Authority: §64.9(b)
7.13 VOC Emissions Monitoring Records	Recordkeeping Authority: WAC 173-401-615(2)(a)
7.14 Steam Production Records	Recordkeeping Authority: WAC 173-401-615(2)(a)
7.15 Veneer Production Records	Recordkeeping Authority: WAC 173-401-615(2)(a)
7.16 Hog Fuel Consumption Records	Recordkeeping Authority: WAC 173-401-615(2)(a)
8.1 Certification of Reports.	Reporting Authority: WAC 173-401-630(1)
8.2 Annual Compliance Certification.	Reporting Authority: WAC 173-401-630(5)
8.3 Confidential Information	Reporting Authority Local Only : ORCAA 1.3.03
8.4 Monitoring Summary Reports.	Reporting Authority: WAC 173-401-615(3)(a); §64.9(a)
8.5 Reporting Deviations From Permit Conditions.	Reporting Authority: WAC 173-401-615(3)(b);

CONDITION	REGULATORY BASIS
	WAC 173-400-107(3); WAC 173-401-645
8.6 Notification of Control Equipment Malfunction	Reporting Authority: WAC 173-401-615(2)
8.7 Notification of Need for Improved Monitoring of EU2	Reporting Authority: §64.7(e)
8.8 Notification of Complaint Received	Reporting Authority: WAC 173-401-615(2)
8.9 Annual Inventory Report.	Reporting Authority: WAC 173-400-105(1); ORCAA 1.13
8.10 Source Test Plans.	Reporting Authority: WAC 173-401-630(1)
8.11 Source Test Reports.	Reporting Authority: WAC 173-401-630(1)
8.12 Notification of Soot Blowing/Grate Cleaning Schedule	Reporting Authority: WAC 173-400-070(2)
10.1 Permit Shield.	Permit Shield Authority: WAC 173-401-640(1)
10.2 Inapplicable or Exempt Requirements.	Permit Shield Authority: WAC 173-401-640
10.3 Exclusions	Permit Shield Authority: WAC 173-401-640

**ATTACHMENT 1:
NOC Approvals**

**ATTACHMENT 2:
PTE Emission Calculations**