OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

MEMORANDUM **April 23, 2008**

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THROUGH:	Kendal Stegmann, Senior Environmental Manager, Compliance and Enforcement
THROUGH:	Jian Yue, P.E., Engineering Section
THROUGH:	Phil Martin, P.E., Engineering Section
THROUGH:	Peer Review
FROM:	Dale Becker, P.E., New Source Permits Section
SUBJECT:	Evaluation of Permit Application No. **97-057-C (M-9) PSD** Weyerhaeuser Company-Valliant Mill Valliant, McCurtain County, Oklahoma Secs. 26, 27, 28, 33 and 34-T6S-R21E, Lat 33.998˚, Long-95.113˚ UTM Zone 15,306.50 Km Easting by 3,763.50 Km Northing Located One Mile West of Valliant on US-70

SECTION I. INTRODUCTION

Weyerhaeuser operates a Kraft Process paper mill (SIC 2631, NAIC 32213) in southeast Oklahoma. Weyerhaeuser is planning a series of new construction and modification projects to enhance its existing Valliant, Oklahoma, paper products manufacturing facility (Valliant Mill). Weyerhaeuser has an active consent order from ODEQ (No. 08-025) which was issued to modify enforceable limitations at the facility. Those modifications are addressed in this permit action.

Current active permits include Permit Nos. 75-011-O, 75-012-O, 86-019-O, 91-093-O, 95-224-O, 96-043-C (PSD) (now Null & Void), 96-043-C (M-1), 96-043-C (M-2)(PSD), 96-043-C (M-3)(PSD), 96-188-C, 99-134-C, 96-043-C(M-5)(PSD), and 97-057-C. Permit No. 97-057-C(M-2) covered the chipper system facility owned and operated by Valliant Chips, Inc. (a subsidiary of The Price Companies). Permit No. 97-057-C (M-4) (PSD) authorized phased construction at the facility including a new recovery furnace project, new CFB, and new lime kiln. Permit No. 97-057-C (M-8) (PSD) was a minor modification to permit (M-4) to limit annual natural gas combustion for the new recovery furnace. Conditions and limits of Permit No. 97-057-C (M-8) PSD remained essentially unchanged from Permit No. 97-057-C (M-4).

Weyerhaeuser obtained (M-4) to make the following changes at the Mill:

- Construction of a new chemical recovery furnace to replace the existing chemical recovery furnace (CRF) used in the chemical recovery process.
- Construction of a circulating fluidized bed (CFB) boiler to enhance the mill's steam production capabilities.
- The No. 2 Power Boiler, which was permitted under Permit No. 96-043-C (M-3), will not be constructed.
- Construction of a new lime kiln to supplement regeneration of the mill's cooking chemicals.
- Installation of new spent liquor mix tanks to replace the existing spent liquor mix tanks.
- Enhancements to the evaporator area.
- Installation of new smelt dissolving tanks to replace the existing smelt dissolving tanks.
- Decommissioning of the existing Bark Boiler.
- Decommissioning of the existing Power Boiler from normal operation from a primary steam generating source to backup status.
- Decommissioning of the non-condensable gas (NCG) thermal oxidizer from regular operation and rerouting of NCGs and stripper off-gases (SOGs) to the new CRF. The thermal oxidizer will function as a backup control device when the CRF and/or Lime Kiln is unavailable;
- Installation of an additional brownstock washing line (BSW).
- Enhancements to the existing paper machines and Old Corrugated Container (OCC) plants.
- Enhancements to the existing No. 1 and No. 2 Digester systems

Emissions from the project anticipated in (M-4) were evaluated using PSD netting to determine PSD applicability for each criteria pollutant. The PSD netting revealed that the net emissions change for PM, PM_{10}, CO, SO_2, NO_X, TRS, and Pb do not exceed their respective PSD SERs. PSD netting for VOC and SAM did exceed SERs, so further PSD review for these pollutants was required.

Several projects authorized in (M-4) are complete, including the new CRF, smelting dissolving tank, mix tanks and super concentrator, the decommissioning of the old CRF, and several enhancements to the paper making and OCC processes. However, current market conditions have led Weyerhaeuser Company to explore alternatives to the planned construction of a CFB boiler at the Valliant Mill. One alternative includes reconstructing the old recovery furnace into a BFB that would be used in combination with current steam generating units (i.e., bark, power and package) to provide the Mill's steam needs. This option may include the addition of environmental controls or reduced annual emission rates for the current units. Also, Weyerhaeuser is proposing the following additions to what is permitted in (M-4):

- Modify the lime kilns;
- Enhancements to the No. 3 Digester system;
- Modify the existing brownstock washer areas;
- Modify the causticizer area;
- Modify the lime slakers; and
- Review and update emission factors throughput the permit as needed.

The permit is presented in three distinct phases, as described below. Each phase of the netting is built upon the previous phase such that the Phase III (a or b) netting analysis contains the collective modifications of the entire project, as shown in Tables 5-1 through 5-4.

A. Phase I - The new Recovery Furnace project (complete). Phase I sets a limit on the combined annual emissions of NOx on the new recovery furnace and power boiler. Enhancements to existing areas including but not limited to: causticizing area; brownstock washing area and/or additional 4th BSW line, enhanced evaporation; additional screening in the chip yard, enhancement to the digester systems, and continued enhancements to the paper machines and OCC areas;

B. Phase II - Projects outlined in Phase I and: Power Boiler NOx emissions control, enhancements to causticizing area, Evaporator area, and existing Lime Kiln including a new burner installation, increase in pet coke burning, SOGs/NCGs full time combustion; and possibly lifting the natural gas limits on the new recovery furnace; and any enhancements not completed in Phase I; and

C. Phase III generally represents a boiler alternative and a new lime kiln:

- Phase IIIa - Projects outlined in Phases I and II as well as: construct a CFB as originally depicted in (M-4); new lime kiln with additional pet coke burning and handling; and enhancements not completed in Phases I and II; or
- Phase IIIb - Projects outlined in Phases I and II as well as: construct a BFB Boiler and/or modify the existing steam generation units, new lime kiln with additional pet coke burning and handling; and enhancements not completed in Phases I and II.

<u>Steam Generating Units</u>
The Valliant Mill currently generates steam using heat recovery on the new Recovery Furnace in combination with three steam-producing boilers (i.e., Bark Boiler, Power Boiler, and Package Boiler) that feed steam into a common header. (M-4) relied on the emission credits from the decommissioning of the old Recovery Furnace, Smelt Dissolving Tank and Emergency Standby of the Thermal Oxidizer to build the new Recovery Furnace.

The emission credits from decommissioning the Bark Boiler and utilizing the Power Boiler as a backup steam generating unit supported building the new CFB Boiler. (M-4) authorized a new CFB to replace the Bark Boiler and some steam generating from the Power Boiler as outlined in Phase IIIa. However, current conditions required Weyerhaeuser to re-evaluate alternatives to the new CFB. Phase IIIb includes the reconstruction of the old recovery furnace into a smaller BFB (i.e., heat input of 1,200 MMBTU/hr) with the continued operation of the Bark and Power Boilers.

<u>Chemical Recovery Furnace</u>
The addition of saltcake to the recovery furnace allows for a decrease of raw chemical addition to the liquor loop process. Weyerhaeuser is purchasing additional saltcake from outside sources to add to the recovery furnace. The increase of saltcake to the recovery boiler will not increase overall emissions, but will result in an increase to the recovery recycle rate from the current 8% to upwards of 10%. Since the emissions are based on an 8% recovery 'as fired' rate, emissions tracking will be adjusted accordingly.

No. 3 Digester System Modifications

The digesters produce pulp by utilizing chemical and semi-chemical pulping processes in which fiber sources such as wood chips are digested in a water solution of pulping chemicals. This solution chemically dissolves the lignin that holds the fibers together, (M-4) proposed enhancements to the to the existing No. 1 and No. 2 Digester systems. This application includes enhancements to the No. 3 semi-chemical digester system to increase throughput in that area.

Brownstock Washer Modifications

The brownstock washing areas include brownstock washers (BSW) and brownstock washer filtrate tanks. Brownstock washing areas 1 and 2 also include a screening process. Brownstock washing area 3 currently performs a similar function to washing areas 1 and 2, but it washes pulp from a semi-chemical pulping system. Permit No. 97-057-C (M-4) proposed the installation of an additional brownstock washing system (brownstock washing area 4). However, upon issuance of this permit modification, Weyerhaeuser may choose to modify No. 1 and/or No. 2 brownstock washing areas to improve utilization and/or build brownstock washing area 4. In addition, Weyerhaeuser is now considering the modification of washing area 3 to increase efficiency and utilization of existing capacity.

The collective project triggers the PSD SER for VOC. Therefore, new and modified sources are subject to BACT. BACT for brownstock is currently the collection and control of emissions. Weyerhaeuser will comply with BACT controls for the new or modified units.

Lime Kiln Modifications

(M-4) authorized the construction of a new Lime Kiln (EUG E7b) to supplement the existing Lime Kiln (EUG E7a [formerly, EUG E7]) in the chemical recovery process. Lime mud from the causticizing system is calcined in the Lime Kiln to regenerate quick lime.

Weyerhaeuser now is proposing to modify the existing Lime Kiln area to improve quick lime quality, increase efficiency, increase pet coke burning, and increase material throughput. This will be accomplished through the modification of the existing kiln and/or the construction of a new kiln.

Causticizer Area Modifications

In the causticizing area, cooking liquor is regenerated by reacting green liquor from the Smelt Dissolving Tanks with calcium oxide (quick lime). The lime is recovered and re-used in this process. The current causticizer area will be modified to increase the volume of regenerated cooking liquor. This could include but not be limited to liquor filtration and mud filtration. In addition, (M-4) incorrectly listed throughput and will be updated.

Lime Slaker Modifications

The lime slakers mix lime with green liquor to initiate the causticizing process that regenerates cooking liquor. The lime is fed from lime bins that are filled either from the Lime Kiln or by lime transported from off-site. Green liquor enters the slakers from the green liquor clarifier, from green liquor storage, or from off-site sources. Weyerhaeuser anticipates enhancements the lime slakers to accommodate increased throughput. In addition, (M-4) incorrectly listed the lime slaker throughput (for one slaker instead of two) and will be updated in this application.

<u>Chipyard Modification</u>
The chipyard stores fiber source materials, such as wood chips. The chips can be stored for later retrieval or conveyed directly to the chip screening/conditioning system (EUGs F7 and F9). Weyerhaeuser is planning to modify the screening system by adding an Air Density Separator (ADS) to improve screening efficiency.

<u>Other Modifications</u>
(M-4) authorized enhancements to the Old Corrugated Container (OCC) plants, the digester systems, the evaporator area, and the paper machines. These projects will continue as proposed. The current permit also has separate emission limits for the Spent Liquor Mix Tank (EU E3d). The emissions from this tank are routed through the Recovery Furnace (EU E3c) for pollutant control. Weyerhaeuser is requesting that the emission limits for EU E3d be removed from the permit.

SECTION II. FACILITY DESCRIPTION

Initial construction of the mill began in 1969 and was completed in 1971. The mill produces paper products through the use of chemical digesters, secondary fiber processing, and paper machines. The primary raw materials used in the production of paper products at the mill are fiber source materials such as, but not limited to, wood chips from both softwood and hardwood species and old corrugated containers (OCC). In addition to the pulping and paper-making process units, other equipment at the mill are involved with recovering the chemicals used to produce virgin pulp. Spent cooking liquor is concentrated, burned to remove organics (recover heat value), and reacted with lime to regenerate the cooking liquor. The spent lime used for regeneration is recovered, washed, and calcinated for reuse. Steam requirements at the mill are (or will be) supplied by the new chemical recovery furnace, and various boilers (CFB/BFB, Bark Boiler, Power Boiler, and Package Boiler) that are used in combination to meet the steam demand. Steam is also used to drive a turbine electric generator that supplements the mill's electric energy needs.

Operations at the mill can be subdivided into six (6) functional areas. The functional areas are based on the flow of materials within the mill and on the various steps in the production process. Emissions units within each functional process area are identified.

A. Pulping

The digesters produce pulp by utilizing a chemical or semi-chemical pulping process in which fiber sources such as wood chips are digested in a water solution of pulping chemicals. This solution chemically dissolves the lignin that holds the fibers together.

Repulping operations prepare fiber for the paper machines. Repulping hydromechanically breaks down fiber source materials in water, which allows the fiber stock to be introduced into the paper machine stock preparation equipment. The fiber sources can include but are not limited to virgin fiber as well as pre-consumer and post-consumer secondary (recycled) fiber.

B. Brownstock Washing

The brownstock washing areas include brownstock washers and brownstock washer filtrate tanks. Brownstock washing area 1 and 2 also include a screening process. Pulp from digester surge tanks is screened in brownstock washing areas 1 and 2 to insure uniform fiber size. The flow-through tanks in the screening system are vented to the atmosphere. Brownstock washing area 3 performs a similar function to brownstock washing areas 1 and 2. However, brownstock washing area 3 washes pulp from the no. 3 digester, which uses a semi-chemical pulping system.

C. Paper Making

The paper machine wet end forms a base sheet by means of the primary headbox, which distributes the dilute stock evenly over a continuously moving wire screen. Water is removed from the stock by gravity drainage, by vacuum, and by press rolls. Until the fiber sheet has dried sufficiently to support its own weight, it is supported first by the wire screen and then by a moving felt sheet. Water removed from the stock during processing, called white water, is collected and reused in various mill processes.

D. Steam Production

Steam producing units on completion of this project include:

- Bark Boiler – Emissions Unit D1
- Power Boiler – Emissions Unit D2
- Package Boiler – Emissions Unit D3
- CFB or BFB Boiler - Emissions Unit D5

In addition to the listed boilers, steam is produced by the new Recovery Furnace through waste heat recovery. Steam from the Bark Boiler, Power Boiler, and Recovery Furnace feeds a common steam header. From the header, the steam may be used to drive the turbine electric generator. Steam extracted from the generator and steam that bypasses the generator is fed into the steam distribution system for use in various processes. Steam from the Package Boiler feeds directly into the steam distribution system.

The Bark Boiler burns a variety of fuels in varying combinations and amounts. Fuels include but are not limited to wood residues, OCC rejects, wastewater treatment sludge, fuel oil, coal and natural gas. Oils such as residual fuel oil, petroleum residual fuel oil, decant slurry oil, carbon black feed stock oil, and slurry oil are all recognized as fuel oil. Used oils from mill equipment (including small portions of used antifreeze and miscellaneous non-hazardous used parts washer fluid) may also be added to the Bark Boiler fuel mixture. Particulate emissions from the Bark Boiler are controlled by a primary dust collector and a wet venturi scrubber. The presence of wood ash and the wet venturi scrubber also results in a reduction in SO_2 emissions. Exhaust gases are emitted to the atmosphere through a dedicated stack.

E. Chemical Recovery

The Turpentine Recovery System condenses turpentine from vapors collected from equipment in the Digester areas. The recovered turpentine is sold as a by-product. The non-condensable fractions of these vapors are combusted in the NCG Thermal Oxidizer or the Lime Kiln.

Spent pulping liquor collected in the weak black liquor storage tanks is super concentrated before it is processed in the Recovery Furnace. Transfers of spent liquor to or from off-site locations may be accomplished at any point in these processes. During the evaporation process, a fatty substance called “soap” is removed from the spent liquor by soap skimmers. The soap is sent to the Tall Oil Plant for conversion into tall oil, which is sold as a product.

The Recovery Furnace is used to recover process chemicals from spent liquor from the spent liquor concentration area or spent liquor obtained from off-site. Prior to being burned, the spent liquor may pass through mix tanks, where it may be mixed with particulate matter captured in the Recovery Furnace’s electrostatic precipitator (ESP). A molten inorganic residue called smelt forms in the Recovery Furnace as a result of the burning of spent liquor. The smelt is drawn off into the Smelt Dissolving Tank and used to initiate the causticizing process that regenerates cooking chemicals. Smelt from the recovery furnace flows into the Smelt Dissolving Tanks, where it is dissolved in water or in weak wash, which is water that has been used in the Causticizing System to wash lime mud. The resulting solution, called green liquor, is sent to the Green Liquor Clarifier for further processing. The Smelt Dissolving Tanks are vented to a combined stack after particulate emissions and TRS have been reduced by spray scrubbers. The new smelt dissolving tanks will not be emission points. Rather, airflow from the new smelt dissolving tanks will be routed through the new chemical recovery furnace as combustion air make-up.

The Lime Slakers mix lime with green liquor to initiate the causticizing process that regenerates cooking liquor. The lime is fed from lime bins that are filled either from the Lime Kiln or by lime transported from off-site. Green liquor enters the Slakers from the green liquor clarifier, from green liquor storage, or from off-site sources. The mixture of green liquor and lime flows from the Slakers through clarifiers, which remove unreacted lime and other debris, to the Causticizers.

In the Causticizing area, cooking liquor is regenerated by reacting green liquor from the Smelt Dissolving Tanks with calcium oxide (quick lime). The lime is recovered and re-used in this process. Green liquor from the Smelt Dissolving Tanks (or from off-site sources) flows to the Green Liquor Clarifier, where heavy particles such as undissolved smelt are allowed to settle out. The settled material, known as dregs, goes to the process sewer or to the dregs filter. If the filter is used, the filtrate is returned to the Green Liquor Clarifier, and the remaining dregs are sent to the process sewer, disposed of, or transferred off-site.

Lime Mud from causticizing is calcined in the Lime Kiln to regenerate calcium oxide (quick lime). The Lime Kiln is fueled by natural gas and pet coke and is also currently used as a backup to the NCG Thermal Oxidizer if the Thermal Oxidizer is not being used to oxidize the collected NCGs/SOGs.

Particulate emissions from the kiln are controlled by an electrostatic precipitator, which returns collected lime dust to the kiln. The regenerated quick lime is transferred to the lime bins that feed the Slakers. The Lime Bins are vented to the lime kiln combustion air makeup.

F. Miscellaneous Processes

The Woodyard operations include the receipt, storage, and handling of fiber source materials and Bark Boiler fuels.

Solid fuels for the Bark Boiler are received by railroad or truck. After receipt, the fuels are transferred to the Bark Boiler fuel storage pile. Oversized materials diverted from the fiber source processing/storage area pass through a hogger for size reduction before being stockpiled. Fuel reclaimed from the storage pile is conveyed directly to the Bark Boiler.

Heavy trucks and other vehicles regularly travel on paved and unpaved roads within the Valliant Mill. These vehicles are expected to cause fugitive dust emissions.

The Valliant Mill Wastewater Treatment System (WWTS) consists of the Bark Ash Dewatering System, the bar screen, the Primary Effluent Clarifier, a Sludge Dewatering Operation, the perforated plate screen, Aerated Stabilization Basins, and Emergency Storage Ponds. With the exception of the Sludge Dewatering Operation, the WWTS components are open to the atmosphere. VOCs and reduced sulfur compounds contained in mill wastewater are emitted from the system components.

A variety of solid wastes are generated as part of the manufacturing processes at the Valliant Mill. Wastes generally are transported by trucks from the mill to the on-site Solid Waste Disposal facility (landfill) located south of the manufacturing complex. The majority of the roads in the manufacturing complex are paved while those in the landfill area are unpaved.

SECTION III. PROCESS DESCRIPTIONS

Operations at the Valliant Mill have been subdivided into six functional areas. The functional areas are based on the flow of materials within the Valliant Mill and on the various steps in the production process. Emissions units within each functional process area are identified. Any particular emissions unit may include more than one significant emission point.

VALLIANT MILL FUNCTIONAL AREAS

Functional Area A – Pulping

A1 - No. 1 Digester System
A2 - No. 2 Digester System
A3 - No. 3 Digester System
A4 - No. 1 OCC Plant
A5 - No. 2 OCC Plant
A6 - Makedown Pulper
A7 - No. 3 OCC Plant
A8 - OCC Lightweight Rejects Baghouse
A8b- OCC Ltwt Rjts Baghouse-New Boiler

Functional Area B – Brownstock Washing

B1 - No. 1 Brownstock Washing Area
B2 - No. 2 Brownstock Washing Area
B3 - No. 3 Brownstock Washing Area
B4 - No. 4 Brownstock Washing Area *(proposed)*

Functional Area C – Paper Making

C1 - No. 1 Paper Machine (Stock Prep)
C2 - No. 1 Paper Machine (Wet End)
C3 - No. 1 Paper Machine (Dry End)
C4 - No. 2 Paper Machine (Stock Prep)
C5 - No. 2 Paper Machine (Wet End)
C6 - No. 2 Paper Machine (Dry End)
C7 - No. 3 Paper Machine (Stock Prep)
C8 - No. 3 Paper Machine (Wet End)
C9 - No. 3 Paper Machine (Dry End)

Functional Area D – Steam Production

D1 - Bark Boiler *(decommissioned in Ph IIIA)*
D2 - Power Boiler *(decommissioned from normal operation)*
D3 - Package Boiler
D4 - Power Boiler No. 2 *(permitted; will not be constructed)*
D5 - CFB Boiler *(proposed alternative in Phase IIIA)*
D5-2- BFB Boiler *(proposed alternative in Phase IIIB))*
D6- - Recovery Furnace *(proposed)* *(formerly EUG E 3c)*

Functional Area E – Chemical Recovery

E1- Turpentine Recovery System
E2a - Spent Liquor Concentration
E2b - Evaporator Sump
E3a - Spent Liquor Mix Tank *(decommissioned)*
E3b - Recovery Furnace *(decommissioned)*
E3c – see D6 (Recovery Furnace *(proposed))*
E3d – Spent Liquor Mix Tanks (*proposed*)
E4a - Smelt Dissolving Tanks *(decommissioned)*
E4b - Smelt Dissolving Tanks *(proposed)*
E5 - Lime Slakers
E6 - Causticizing System
E7a - Lime Kiln No. 1 *(formerly EUG E7)*
E7b - Lime Kiln No. 2*(proposed)*
E8 - Tall Oil Plant
E9 - Organic Liquid Storage Vessels
E10 - Volatile Organic Liquid Storage Tank

Functional Area F – Miscellaneous Areas

F1 - Woodyard
F1a - Coal Material Handling – Bark Boiler
F1b - Coal Material Handling - *New*
F2 - Plant Traffic Road Emissions
F3a - Wastewater Treatment System *(formerly EUG F3)*
F3b - Wastewater Pipeline
F4a - NCG Collection and Thermal Oxidation *(decommissioned from normal operation)*
F4b - LVHC/HVLC NCG Collection System
F5 - Landfill Operations
F6 - Diesel Stormwater Pump
F7/F9 - Wood Chip Screening & Conditioning *(ADS #3 proposed)*
F10 – Steam Stripper System
F11 – Misc. Insignificant Activities
F13 – Petcoke Handling System No. 1
F14 – Petcoke Handling System No. 2 *(proposed)*

Functional Area A - Pulping

Digester Areas (EUGs A1, A2, A3)

The Digesters produce pulp by utilizing a chemical pulping process in which fiber sources are digested in a water solution of pulping chemicals. This solution chemically dissolves the lignin that holds the fibers together. Each Digester area operates in a similar manner, as described below. The No. 1 and No. 2 Digesters use a Kraft pulping system, and the No. 3 Digester uses a semi-chemical pulping system.

Fiber source materials are conveyed from “chip silos” to “chip bins”, which are vented to the high volume, low concentration (HVLC) NCG System (EUG F4). From each chip bin, a meter feeds the material into a steaming vessel, which heats the material to processing temperature. The steaming vessels are vented to the Turpentine Recovery System (EUG E1).

From the steaming vessels, the fiber source material is introduced into the Digesters, along with heated cooking liquor. The material is digested as it travels down the Digesters by gravity flow. The No. 1 Digester area includes a pressurized impregnation vessel between the steaming vessel and the Digester. The fiber source material is steeped in cooking liquor in the impregnation vessel before its introduction into the Digester.

Vapors produced by the cooking process are vented to the Turpentine Recovery System (EUG E1). The spent cooking liquor, which contains dissolved lignin and other organic and inorganic materials, is withdrawn from the Digesters. This spent liquor is depressurized in flash tanks and sent to the weak liquor storage tanks. Vapors from the flash tanks are vented to the Turpentine Recovery System (EUG E1) and/or the steaming vessel.

The digested pulp, also known as brownstock, is withdrawn from the bottom of the Digesters. The brownstock passes through defibrators, which mechanically break apart, the mostly-digested fibers. The pulp is then sent to a surge tank that is vented to the HVLC NCG System (EUG F4).

Repulping Operations (OCC Plants) (EUGs A4, A5, A6, A7)

Repulping operations prepare fiber for the paper machines. Repulping hydromechanically breaks down fiber source materials in water, which allows the fiber stock to be introduced into the paper machine stock preparation equipment. The fiber sources can include, but are not limited to, virgin fiber, as well as preconsumer and postconsumer secondary (recycled) fiber.

The OCC Plants process OCC (old corrugated container) materials, which include, but are not limited to, old corrugated containers (e.g., cardboard boxes), old newspapers, rejected materials from paper machines or box manufacturing facilities, and other types of fiber-containing products.

OCC is received at the Valliant Mill by truck and by rail. Once the OCC is repulped, it then goes through a series of steps to remove heavy and light rejects and adequately separate the fibers from each other. Heavy reject materials may be landfilled or transferred off-site. Light rejects are pressed to remove water, then may be landfilled, transferred off-site, or transferred to a receiving bin before being used as a fuel source. The prepared fiber is stored in OCC high density storage chests for use in the paper machines.

As part of the proposed project, changes will be made to the OCC Plants to enable the Valliant Mill to achieve the target production.

The Makedown Pulper performs a function similar to the OCC plants. It uses box plant trim, which is a relatively clean fiber source material, and cull rolls from the Valliant Mill paper machines. Fiber prepared in the Makedown Pulper can be introduced into the stock preparation areas of any of the three paper machines. There are no significant emission points associated with the Makedown Pulper.

OCC Lightweight Rejects Baghouse (EUGs A8 & A8b)

The OCC Lightweight Rejects Baghouse controls particulate emissions from the Bark Surge Bin. Currently, OCC reject materials are blown from the OCC Plants to this bin prior to being introduced to the Bark Boiler fuel stream. As part of the proposed project, this unit will be relocated to facilitate introduction of the OCC reject materials into the CFB Boiler fuel stream or another baghouse A8b will be added.

Functional Area B - Brownstock Washing

Brownstock Washing Areas (EUGs B1, B2, B3, B4)

The brownstock washing areas include brownstock washers and brownstock washer filtrate tanks. Brownstock washing areas 1 and 2 also include a screening process.

Pulp from digester surge tanks is screened in brownstock washing areas 1 and 2 to ensure uniform fiber size. The flow-through tanks in the screening system are vented to the atmosphere. Pulp, either from the screening systems or from digester surge tanks, is washed over rotary vacuum drums in the brownstock washers to remove spent cooking chemicals. After being washed, the pulp is transferred to several high density storage silos. The brownstock washers are hooded and are vented from the pulp mill building to the atmosphere.

Filtrate from the brownstock washers is collected into brownstock washer filtrate tanks. From these tanks, filtrate is either reused in the washing process or is returned to the digester areas.

Brownstock washing area 3 performs a similar function to that described above for brownstock washing areas 1 and 2. However, brownstock washing area 3 washes pulp from the No. 3 Digester, which uses a semi-chemical pulping system. Therefore, brownstock washing area 3 is not subject to the maximum achievable control technology (MACT) standard for pulp and paper mills (40 CFR Part 63, Subpart S).

The proposed project includes the installation of an additional brownstock washing system (brownstock washing area 4). As a new brownstock washing system, the unit will be subject to the New Source Performance Standard (NSPS) in 40 CFR Part 60, Subpart BB. Therefore, emissions from the new brownstock washing system will be collected and routed to the NCG collection system. The collection and control of this source will also comply with the MACT standard in 40 CFR Part 63, Subpart S.

Functional Area C - Paper Making

Paper Machine Stock Preparation (EUGs C1, C4, C7)

Stock preparation is a process of blending the fibers (stock) with water and other additives for consistency control and to prepare the stock for introduction onto the paper machines. In general, the stock is diluted, blended, and cleaned as it passes from vessel to vessel through the stock preparation process. Stock from various sources, such as virgin fiber from the digester areas, secondary fiber from the OCC plants, and recycled fiber from the Makedown Pulper, may be blended together in this process. In addition, fiber recycled from the wet end or the dry end (known as broke) may be processed and added to the stock during preparation.

The various chests (vessels) associated with the stock preparation process are vented either directly to the atmosphere or to the interior of the paper machine building.

Paper Machine Wet End (EUGs C2, C5, C8)

The paper machine wet end forms a base sheet by means of the primary headbox, which distributes the dilute stock evenly over a continuously moving wire screen. Water is removed from the stock by gravity drainage, by vacuum, and by press rolls. Product with additional layers can be produced by using additional headboxes. Until the fiber sheet has dried sufficiently to support its own weight, it is supported first by the wire screen and then by a moving felt sheet. Water removed from the stock during processing, called white water, is collected and reused in various mill processes. Various sections of the paper machine wet end are vented to the atmosphere or to the interior of the paper machine building.

Paper Machine Dry End (EUGs C3, C6, C9)

The fiber sheet passes from the wet end of the machine to the dry end, where it is heated on drying cylinders. The sheet is then processed on trimming and winding equipment that produces paper rolls of appropriate width and diameter. Product trimmed from rolls and cull resulting from breaks is reprocessed in the dry end pulper. The recovered fiber is returned to the stock preparation area.

Emissions from the dryer section of each machine are vented to the atmosphere. The dry end pulpers and other insignificant emission points vent to the interiors of the paper machine buildings.

Functional Area D - Steam Production

Steam Producing Units

The Valliant Mill currently operates three steam-producing boilers: the Bark Boiler, the Power Boiler, and the Package Boiler. A second power boiler (Power Boiler No. 2) is permitted under Permit No. 96-043-C (M-3), but will not be constructed. Under Phase IIIa, the Bark Boiler will be decommissioned, the Power Boiler will be decommissioned from normal operation, with continued operation as a back-up steam generating unit, and a CFB Boiler will be installed. In addition, steam will be produced by the proposed Recovery Furnace (D6 – formerly EUG E3c) through waste heat recovery.

Steam from the boilers and the new Recovery Furnace feeds a common steam header. From the header, the steam may be used to generate electricity. As part of the project, Weyerhaeuser proposes to upgrade the electric generating capacity of the Valliant Mill. Steam extracted from the generator and steam that bypasses the generator is fed into the steam distribution system for use in various processes. Steam from the Package Boiler feeds directly into the steam distribution system.

The CFB/BFB Boiler will burn a variety of fuels in varying combinations and amounts. Fuels may include, but are not limited to coal, wood and bark residuals, OCC rejects, wastewater treatment sludge, oil, natural gas, petroleum coke (petcoke), and NCGs/SOGs. Used oils from mill equipment may also be added to the CFB/BFB Boiler fuel mixture. Exhaust gases will be emitted to the atmosphere through a shared stack with the new Recovery Furnace.

The Bark Boiler (EUG D1) burns a variety of fuels in varying combinations and amounts. Fuels include but are not limited to coal, wood and bark residues, OCC rejects, wastewater treatment sludge, oil, and natural gas. Oils from mill equipment (including small portions of used antifreeze and miscellaneous non-hazardous used parts washer fluid) may also be added to the Bark Boiler fuel mixture. Particulate emissions from the Bark Boiler are controlled by a wet venturi scrubber. In addition, multiclones are a part of the bark boiler operations. The presence of wood ash and the wet venturi scrubber also results in a reduction in SO_2 emissions. Its emissions discharge through a dedicated stack.

The existing Power Boiler can burn natural gas, oil, and propane. Exhaust gases are emitted to the atmosphere through a shared stack with the Tall Oil Scrubber (existing Main Stack). As part of the proposed project, the Power Boiler will be limited in levels of normal operation with each phase. The NOx annual emissions of the power boiler will be tracked in combination with the new recovery furnace and other boilers, depending upon the phase of operation. The prior permit (M-8) required a stack test for NOx to verify the emission factor. Testing notification was made timely and the test was completed within the 180 day requirement (Feb 2005).

The Package Boiler burns only natural gas. Its emissions discharge through a dedicated stack.

The Recovery Furnace is used to recover process chemicals from spent liquor from the spent liquor concentration area (EUGs E2a and E2b) or spent liquor obtained from off-site. Prior to being burned, the spent liquor may pass through the Spent Liquor Mix Tanks (EUG E3d), where it may be mixed with particulate matter captured in the Recovery Furnace's electrostatic precipitator (ESP). The spent liquor mix tanks emit through the new recovery furnace.

As part of the proposed project, the new Recovery Furnace is the primary control device for NCGs and SOGs, which was rerouted from the NCG Thermal Oxidizer. The Lime Kiln still operates as a NCG/SOG combustion source (proposed as more than back-up in Phase II). The new CFB/BFB Boiler will serve as the primary backup control device for NCGs and SOGs. The

NCG Thermal Oxidizer is proposed to be decommissioned as part of the project; however, it will be kept available in the event of extenuating circumstances that prevent either the Recovery Furnace, Lime Kiln or the CFB/BFB Boiler from combusting NCGs/SOGs.

In addition to burning spent liquor and combusting NCGs/SOGs, the Recovery Furnace also uses natural gas and is capable of burning other materials that may contain spent cooking chemicals, such as soap from the evaporators, brine from the tall oil reactor, and turpentine. The natural gas total fuel is under an annual 10% capacity limit. In Phases II or III, the mill may decide to lift the annual capacity limit by following regulatory requirements. Heat produced by the Recovery Furnace is used to generate steam. Exhaust gases will be emitted to the atmosphere through a shared stack with the proposed CFB Boiler (the BFB Boiler will emit gases through the existing Main Stack).

Functional Area E - Chemical Recovery

Turpentine Recovery System (EUG E1)

The Turpentine Recovery System condenses turpentine from vapors collected from equipment in the Digester areas. The turpentine that is recovered is sold as a by-product. The non-condensable fractions of these vapors are currently combusted in the new recovery furnace or in the Lime Kiln. The NCG Thermal Oxidizer is used as a combustion backup. As part of the proposed project, non-condensable vapors will be rerouted to the proposed CFB/BFB Boiler serving as the primary back-up control device.

In the Turpentine Recovery System for the No. 1 and 2 Digester areas, vapors are condensed to a water fraction, a turpentine (liquid) fraction, and a vapor fraction. The water fraction is collected in a series of tanks before being sent to the steam stripper or sewer. The turpentine fraction flows through a degasser to a turpentine decanter, which separates the turpentine from the remaining water. The water is drawn off and sent to the steam stripper or the sewer. The turpentine flows to the turpentine receiver and then to a storage tank to await loading into trucks. Low volume, high concentration (LVHC) vapors collected from the system are currently combusted in the new recovery furnace or in the Lime Kiln. The NCG Thermal Oxidizer is used as a combustion backup As part of the proposed project, non-condensable vapors will be rerouted to the proposed CFB/BFB Boiler serving as the primary back-up control device.

Turpentine storage and loading facilities, the pump tank that receives liquid from the cyclone separators, and the collection tank are insignificant emission sources that are vented to the atmosphere.

Spent Liquor Concentration (EUGs E2a and Evaporator Sump Vent E2b)

Spent pulping liquor collected in the weak liquor storage tanks is concentrated before it is processed in the new Recovery Furnace. Transfers of spent liquor to or from off-site locations may be accomplished at any point in these processes.

Liquor is concentrated by sending it to a multiple-effect evaporator system and super concentrator, where non-contact steam is used to evaporate water from the liquor. Spent liquor leaving the evaporators may be sent to on-site storage, transferred off-site, or sent on for further concentration.

During the evaporation process, a fatty substance called soap is removed from the spent liquor by soap skimmers. The soap is sent to the Tall Oil Plant (EUG E8) for conversion into tall oil, which is sold as a product.

As part of the proposed project, changes will be made to the spent liquor concentration area to enable the Valliant Mill to achieve the target production.

Recovery Furnace and Spent Liquor Mix Tanks (EUG E3d)

As part of the proposed project, the existing Recovery Furnace (EUG E3b) has been decommissioned and replaced with a new Recovery Furnace (D6, formerly EUG E3c). The new Recovery Furnace will serve in a similar capacity as the decommissioned unit.

The Recovery Furnace is used to recover process chemicals from spent liquor from the spent liquor concentration area (EUGs E2a and E2b) or spent liquor obtained from off-site. Prior to being burned, the spent liquor may pass through the Spent Liquor Mix Tanks (EUG E3d), where it may be mixed with particulate matter captured in the Recovery Furnace's electrostatic precipitator (ESP). The spent liquor mix tanks emit through the new recovery furnace.

A molten inorganic residue called smelt forms in the Recovery Furnace as a result of the burning of spent liquor. The smelt is drawn off into the Smelt Dissolving Tank (formerly EUG E4) and used to initiate the causticizing process that regenerates cooking chemicals. The smelt dissolving tank also emits through the new recovery furnace. There is an emergency by-pass stack available.

Smelt Dissolving Tank (EUG E4b)

Smelt from the Recovery Furnace flows into the Smelt Dissolving Tank, where it is dissolved in water or in weak wash, which is water that has been used in the Causticizing System to wash lime mud. The resulting solution, called green liquor, is sent to the Green Liquor Clarifier (EUG E6) for further processing. As part of the proposed project, the existing Smelt Dissolving Tanks (EUG E4a (formerly, EUG E4)) has been replaced with a new tank. Airflow from the new Smelt Dissolving Tank (EUG E4b) is routed through the new Recovery Furnace as combustion air make-up. Therefore, the new Smelt Dissolving Tank is not an emissions unit. There is also an emergency bypass for the smelt dissolving tank.

Lime Slakers (EUG E5)

The Lime Slakers mix lime with green liquor to initiate the causticizing process that regenerates cooking liquor. The lime is fed from lime bins that are filled either from the Lime Kilns or by lime transported from off-site. Green liquor enters the Slakers from the green liquor clarifier, from green liquor storage, or from off-site sources. The mixture of green liquor and lime flows from the Slakers through classifiers, which remove unreacted lime and other debris, to the Causticizers.

Causticizing Area (EUG E6)

In the Causticizing area, cooking liquor is regenerated by reacting green liquor from the Smelt Dissolving Tanks with calcium oxide (quick lime). The lime is recovered and re-used in this process.

Green liquor from the Smelt Dissolving Tank (or from off-site sources) flows to the Green Liquor Clarifier, where heavy particles, such as undissolved smelt, are allowed to settle out. The settled material, known as dregs, goes to the dregs filter. The filtrate is returned to the Green Liquor Clarifier, and the remaining dregs are sent to the process sewer, disposed, or transferred off-site.

Clarified green liquor can be sent to storage, the Digesters, the Lime Slakers, or off-site destinations. After being mixed with lime in the Slakers, the green liquor goes through a series of Causticizers that provide the residence time needed for the lime to react with the green liquor to regenerate the cooking liquor.

The cooking liquor from the Causticizers flows into clarifiers. The clarified cooking liquor (or cooking liquor from off-site sources) is stored, used in the Digesters, or transferred off-site. The material that settles to the bottom of the cooking liquor clarifiers is lime mud (principally calcium carbonate). The lime mud is washed with water in a Lime Mud Washer. The overflow from the Lime Mud Washer goes to weak wash storage for later use in the Smelt Dissolving Tank and other areas. The washed lime mud is sent to storage tanks and from there to a Lime Mud Filter. The filtered lime mud will be calcined in either of the Lime Kilns (EUGs E7a and E7b), converting it back to calcium oxide. This Lime Kiln product is transported to the lime bins. If the Lime Kilns are not operating, the lime mud is landfilled or transferred off-site.

Lime Kilns (EUGs E7a and E7b)

Weyerhaeuser is proposing to construct a new Lime Kiln (EUG E7b) to supplement the function of the existing Lime Kiln (EUG E7a [formerly, EUG E7]). Both Lime Kilns will serve a similar function in the chemical recovery process.

Lime mud from causticizing is calcined in the Lime Kilns to regenerate quick lime. The existing Lime Kiln's burner modification allows the kiln to combust a combination of natural gas and petcoke as fuel. It is also used as a backup to the Recovery Furnace (or as backup to the secondary backup Thermal Oxidizer) if it is not being used to oxidize the collected NCGs and/or Stripper Off Gases (SOGs). In phase II, the Lime Kiln can be used to burn NCGs/SOGs full time. The proposed Lime Kiln will also combust a combination of natural gas and petcoke as fuel.

Particulate emissions from the kiln are controlled by an electrostatic precipitator, which returns collected lime dust to the kiln.

The regenerated quick lime is transferred to the Lime Bins, which feed the Slakers (EUG E5). The Lime Bins are vented to the Lime Kiln combustion air make-up.

Tall Oil Plant (EUG E8)

Tall oil is a heavy organic oil recovered and sold for various commercial uses. It is produced by the Tall Oil Plant from the soap collected during spent liquor evaporation (EUGs E2a and E2b). Tall oil is produced by charging the Tall Oil Reactor with soap, water, and sulfuric acid. The reactor and mixture are then heated to produce a batch of tall oil.

After the reaction, the contents of the tall oil reactor settle into three layers. The tall oil itself rises to the top of the reactor, from where it is withdrawn to wet tall oil storage tanks. The middle layer is a sludge that contains lignin and other organic materials. This sludge is drawn off into a sludge storage tank. A predominantly sodium sulfate brine solution collects at the bottom of the reactor.

The tall oil is transferred from the storage tanks directly to transport vessels or to another storage tank. Tall oil can be loaded into transport vessels from this storage tank. The sludge is transferred back to the tall oil reactor, caustic is added, and the reactor is heated again in a process known as lignin cook. The resulting material is returned to the evaporator area and mixed with spent liquor for chemical recovery.

A packed bed scrubber controls emissions of total reduced sulfur (TRS) from the tall oil reactor, the wet tall oil tanks, and the brine tank. This scrubber is vented to a shared stack with the Power Boiler (existing Main Stack).

Storage Vessels (EUGs E9 and E10)

Various lower vapor pressure organic liquids, such as black liquors, tall oil, soaps, and fuel oil, are stored in tanks and other vessels at the Valliant Mill (EUG E9). Other volatile organic liquids, such as turpentines and gasoline fuel, are stored in smaller tanks at the Valliant Mill (EUG E10).

<u>Functional Area F - Miscellaneous Processes</u>

Woodyard (EUG F1)

Woodyard operations include the receipt, storage, and handling of fiber source materials and solid fuels.

Fiber Source Materials

Fiber source materials, such as wood chips, are received by railroad or truck. Railcar rollovers and truck lift dumpers are used to unload the material into receiving pits. The received materials can be stored for later retrieval or conveyed directly to the screening operation.

Material to be stored is stockpiled into storage piles by stackers. Material can be removed from the storage piles by reclaimers. Reclaimed material is transferred to chip screening/conditioning (EUGs F7 and F9) and then to chip silos. Undersized (fine) rejects from the scalping screens are conveyed to the Bark Boiler fuel storage pile feed conveyor. Oversized rejects from the scalping screens are either landfilled or added to the Bark Boiler fuel storage pile. This fuel handling system will supply the CFB/BFB Boiler after it has been constructed. The fiber source material is transferred as needed from the chip silos to the chip bins in the Digester areas (EUGs A1, A2, and A3).

Conveyors and transfer points in the fiber source material handling system are partially covered and/or enclosed. This serves to reduce the potential for fugitive particulate emissions from material handling operations.

Solid Fuels

Solid fuels are received by railroad or truck. After receipt, the fuels are conveyed to the fuel storage pile. Oversized materials can be sent offsite or diverted from the fiber source processing/storage area pass and through a hogger for size reduction before being stockpiled. Fuel reclaimed from the storage pile is conveyed directly to the Bark Boiler (or after construction, the CFB/BFB Boiler.)

Conveyors and transfer points in the fuel handling system are partially covered and/or enclosed. This serves to reduce the potential for fugitive particulate emissions from material handling operations.

Proposed Coal Material Handling (EUGs F1a & F1b)

Coal can be received by railroad or truck. After receipt, the fuels are transferred to the bark boiler conveyor or to the fuel storage pile.

Plant Traffic Road Emissions (EUG F2)

Heavy trucks and other vehicles regularly travel on paved and unpaved roads within the Valliant Mill. These vehicles are expected to cause fugitive dust emissions by the action of their tires on the surface of the roads.

Any airborne dust generated by vehicle traffic is emitted directly to the atmosphere. The roads on which these vehicles travel are in good repair, and paved roads are cleaned periodically to minimize the extent of fugitive dust emissions. Unpaved roads are periodically treated to reduce fugitive dust emissions.

Facility vehicles are typically fueled onsite from a gasoline fuel tank (EUG E10). Vehicle traffic occurs in part because of the receipt of raw materials, the shipping of finished products, and the receipt of materials used in the various processes at the Valliant Mill.

Wastewater Treatment System (EUG F3a)

The Valliant Mill Wastewater Treatment System consists of the Bark Ash Dewatering System, the Primary Effluent Clarifier, a Sludge Dewatering Operation, Aerated Stabilization Basins, and Emergency Storage Ponds. With the exception of the Sludge Dewatering Operation, the Wastewater Treatment System components are open to the atmosphere. The Sludge Dewatering Operation is housed in a building with openings (e.g., windows) to the atmosphere. Mainly VOC and reduced sulfur compounds contained in mill wastewater are emitted from the system components. A portable diesel stormwater pump (EUG F6) for stormwater management is utilized as needed.

The Bark Ash Dewatering System receives liquids from the bark ash sand tank. Solids that settle in the Dewatering Ponds are landfilled. The liquid overflow from the Dewatering Ponds is sent to the Runoff Pond. From the Runoff Pond, water overflows to an Aerated Stabilization Basin, while some is recirculated to the bark ash sand tank. The No. 1 Aerated Stabilization Basin can be bypassed, either to another basin or to the National Pollutant Discharge Elimination System (NPDES)-permitted outfall.

Other mill wastewater streams are conveyed to the wastewater treatment area by the process sewer system. These streams pass through a bar screen to the Primary Effluent Clarifier, or bypass the clarifier and mix directly with the overflow from the Runoff Pond. Solids from the primary clarifier go to the Sludge Dewatering Operation. Solids from this operation will either be used as fuel in the CFB Boiler or landfilled. The liquid from sludge dewatering is returned to the Primary Effluent Clarifier. Liquid from the clarifier combines with water from the Runoff Pond. Microbial nutrients may be added to the clarifier effluent to aid biodegradation of organic materials in the liquid. If necessary, clarifier effluent and runoff pond effluent can be sent to emergency holding ponds. Chemical may be used to control WWTS H_2S.

From the No. 1 Aerated Stabilization Basin, wastewater is either discharged or enters the No. 2 Aerated Stabilization Basin for final settling, biodegradation, and clarifying. The effluent from the No. 2 Aerated Stabilization Basin is discharged via the NPDES-permitted outfall. The Aerated Stabilization Basins also receive storm water runoff from various points within the Valliant Mill, including the Landfill Collection Pond and the Chip Pile Collection Pond.

Wastewater Pipeline (EUG F3b)

A wastewater pipeline transfers wastewater effluent from the Valliant Mill to the Red River. Under normal operating conditions, effluent from the Valliant Mill treatment ponds flows to a 48-inch diameter pipeline. The effluent then typically flows by gravity approximately six miles to a collection box. The collection box is open to the atmosphere and is the emission point for any hydrogen sulfide (H_2S) formed in the pipeline. From the collection box, the effluent flows to a 200-foot diffuser at the bottom of the Red River. During periods of heavy rainfall, pumps can be operated to accommodate the increased flow rates.

NCG Collection and Thermal Oxidation (EUG F4)

Many sources of NCGs are vented to one of two collection systems for burning. The LVHC streams are relatively low-flow-rate, high-concentration sources of NCGs, whereas the HVLC streams produce more total gas flow but much lower concentrations of NCGs. The following sources of concentrated NCGs are vented to the LVHC system:

- Turpentine recovery condensers
- Turpentine decanters
- Turpentine recovery underflow tanks
- Turpentine degassers
- Turpentine receiver tank
- No. 3 Digester Area flash steam condensers
- Evaporator hotwells
- Steam stripper system

The steam stripper feed tank (EUG F10) collects and routes condensates from various processes at the facility to the LVHC system. The stripper off-gas (SOG) from the steam stripper is routed directly to the NCG Thermal Oxidizer via an individual line.

The chip bins and digester surge tanks are vented to the HVLC system (EUG F4b). NCGs from the No. 1 Digester chip bin is routed directly to the NCG Thermal oxidizer through an individual line.

The primary control device for the collected NCGs was the NCG/SOGs Thermal Oxidizer. However, as part of the proposed project, NCGs/SOGs have been rerouted to the new Recovery Furnace, with the Lime Kiln serving as the primary back-up. In Phase III (A or B), the CFB /BFB Boiler will serve as the primary back-up control device. The NCG Thermal Oxidizer was proposed to be decommissioned as part of the project; however, it will be kept available in the event of extenuating circumstances that prevent the Recovery Furnace, Lime Kiln or the CFB/BFB Boiler from combusting NCGs/SOGs.

During certain start-up operations and upset conditions, the NCG streams may be released to the atmosphere for a relatively short time for safety reasons. These are recognized technological limitations for purposes of excess emissions reporting (OAC 252:100-9-1).

Solid Waste Disposal Facility Operations (EUG F5)

A variety of solid wastes are generated as part of the manufacturing processes at the Valliant Mill. Wastes generally are transported via trucks from the Valliant Mill to the on-site Solid Waste Disposal facility (landfill) located south of the manufacturing complex. The trucks regularly travel back and forth between the solid waste disposal facility and manufacturing areas. The majority of the roads in the manufacturing complex are paved, while those in the solid waste disposal facility area are unpaved.

Vehicle traffic related to landfill operations may cause fugitive dust emissions by the action of tires on the surface of the roads. In addition, the unloading of waste materials from trucks into the landfill and other associated waste handling operations may generate small amounts of fugitive dust emissions. To limit fugitive emissions, paved roads are periodically cleaned and unpaved roads are periodically treated.

Wood Chip Screening & Conditioning (EUGs F7 and F9)

The Valliant Mill operates wood chip screening and conditioning equipment for processing wood chips prior to being pulped. This area currently consists of bar screens, chip conditioners, and two air density separators. A third air density separator will be installed as part of the proposed project. Emissions from the bar screens and chip conditioners are fugitive in nature. The three air density separators will vent directly to the atmosphere.

Steam Stripper System (EUG F10)

The steam stripper feed tank (EUG F10) collects and routes condensates from various processes at the facility to the LVHC system. The stripper off-gas (SOG) from the steam stripper is routed directly to the NCG Thermal Oxidizer via an individual line.

Miscellaneous Insignificant Activities (EUG F11)

The Valliant Mill has several activities that are insignificant in nature such as storage tanks and emergency engines.

Petcoke Handling Systems (EUGs F13 and F14)

Petcoke is delivered to the mill via trucks. The petcoke is transferred from the truck trailer to a storage silo using pneumatic conveyance. The silo is equipped with a bin vent that allows for air displacement when the silo is being filled with petcoke. The bin vent is equipped with a filter to aid in product recovery. From the storage silo, the petcoke is pneumatically conveyed to the kiln burner. A second petcoke handling system for the new Lime Kiln is planned as part of the proposed project.

SECTION IV. EQUIPMENT

The numbering of emission points is repeated here from the permit application, e.g. "E-A4,C." The applicant has requested that heat input capacity for several units be kept confidential. The information in the column named 'Construction Date' reflects the date the unit was constructed or changes that resulted in permitting activities.

EUG A1 – No. 1 Digester System		
Emission Point	**EU Name/Model**	**Construction Date**
D6 (New Recovery Furnace), or E7 (Lime Kiln) or D5 (CFB Boiler) (or D5-2 BFB Boiler) or F4 (NCG thermal oxidizer)	#1 Pre-Steaming Chip Bin	Pre-1972/2005
	#1 Steaming Vessel	
	#1 Digester	
	#1 Surge Tank	
	1A Stage Flash Tank	
	1B Stage Flash Tank	
	Second Stage Flash Tank	
	Secondary Flash Tank	

EUG A2 – No. 2 Digester System		
Emission Point	**EU Name/Model**	**Construction Date**
D6 (New Recovery Furnace), or E7 (Lime Kiln) or D5 (CFB Boiler) (or D5-2 BFB Boiler) or F4 (NCG thermal oxidizer)	#2 Chip Bin	Pre-1972/2005
	#2 Steaming Vessel	
	#2 Digester	
	#2 Surge Tank	
	Primary Flash Tank	
	Parallel Primary Flash Tank	
	Secondary Flash Tank	

EUG A3 – No. 3 Digester System		
Emission Point	**EU Name/Model**	**Construction Date**
D6 (New Recovery Furnace), or E7 (Lime Kiln) or D5 (CFB Boiler) (or D5-2 BFB Boiler) or F4 (NCG thermal oxidizer)	#3 Chip Bin	Pre-1972/2005
	#3 Steaming Vessel	
	#3 Digester	
	#3 Surge Tank	
	Primary Flash Tank	
	Secondary Flash Tank	

EUG A4 – 1 OCC Plant		
Emission Point	**EU Name/Model**	**Construction Date**
A4	No. 1 OCC Plant	1981/ 2005

The OCC Plants are defined by the Pulp & Paper Industry MACT as “secondary fiber operations,” subject to the MACT only if bleaching were to occur. No bleaching is conducted at this plant.

EUG A5 – No. 2 OCC Plant		
Emission Point	**EU Name/Model**	**Construction Date**
A5	No. 2 OCC Plant	1990/2005

EUG A6 – Makedown Pulper		
Emission Point	**EU Name/Model**	**Construction Date**
A6	Makedown Pulper	Pre-1972/2005

EUG A7 – No. 3 OCC Plant		
Emission Point	**EU Name/Model**	**Construction Date**
A7	No. 3 OCC Plant	2000/2005

EUG A8 & A8b – OCC Lightweight Rejects Baghouses		
Emission Point	**EU Name/Model**	**Construction Date**
A8 & A8b (baghouse stack)	OCC Lightweight Rejects Handling System	1990/2001/2005
	OCC Lightweight Rejects Receiving Bin	

EUG B1 – No. 1 Brownstock Washing Area		
Emission Point	**EU Name/Model**	**Construction Date**
B1	Brownstock Washer 1	Pre-1972 / 2008 (Planned)

EUG B2 – No. 2 Brownstock Washing Area		
Emission Point	**EU Name/Model**	**Construction Date**
B2	Brownstock Washer 2	Pre-1972/1981/ 2008 (Planned)

EUG B3 – No. 3 Brownstock Washing Area		
Emission Point	**EU Name/Model**	**Construction Date**
B3	Brownstock Washer 3	Pre-1972 / 2008 (Planned)

The No 3 BSW is a "semi-chemical" operation. It is therefore not subject to the MACT for the Pulp and Paper Industry. 40 CFR Part 63.443(b) specifies standards only for the LVHC systems in a semi-chemical operation, but pulp washing is defined in 40 CFR Part 63.441 to be a HVLC operation.

EUG B4 – No. 4 Brownstock Washing Area		
Emission Point	**EU Name/Model**	**Construction Date**
D6 (New Recovery Furnace), or E7 (Lime Kiln) or D5 (CFB Boiler) (or D5-2 BFB Boiler) or F4 (NCG thermal oxidizer)	Brownstock Washer 4	2005 / 2008 (Planned)

EUG C1 – No. 1 Paper Machine (Stock Preparation)		
Emission Point	**EU Name/Model**	**Construction Date**
C1	No. 1 Paper Machine (stock preparation)	Pre-1972/1990/ 1996/2005

EUG C2 – No. 1 Paper Machine (Wet End) EUG C3 – No. 1 Paper Machine (Dry End)		
Emission Point	**EU Name/Model**	**Construction Date**
C2,A	Fourdrinier	Pre-1972/1990/ 1996/2005
C2,B	Vacuum Pumps/ Vacuum Flume	
C2,D	Press Section	
C3,A	Dryer Section	

The "Fourdrinier" operation refers to a rotating cylindrical wire mesh screen used for draining water from pulp.

EUG C4 – No. 2 Paper Machine (Stock Preparation)		
Emission Point	**EU Name/Model**	**Construction Date**
C4	No. 2 Paper Machine (stock preparation)	Pre-1972 / 2000 /2005

EUG C5 – No. 2 Paper Machine (Wet End) EUG C6 – No. 2 Paper Machine (Dry End)		
Emission Point	**EU Name/Model**	**Construction Date**
C5,A	Fourdrinier	Pre-1972 / 2000 /2005
C5,B	Press Section	
C5,D	Vacuum Pumps/ Vacuum Flume	
C6,A	Dryer Section	

EUG C7 – No. 3 Paper Machine (Stock Preparation)		
Emission Point	**EU Name/Model**	**Construction Date**
C7	No. 3 Paper Machine (stock preparation)	1981 / 2002 /2005

EUG C8 – No. 3 Paper Machine (Wet End) EUG C9 – No. 3 Paper Machine (Dry End)		
Emission Point	**EU Name/Model**	**Construction Date**
C8,A	Fourdrinier	1981 / 2002 /2005
C8,B	Press Section	
C8,D	Vacuum Pumps/ Vacuum Flume	
C9,A	Dryer Section	

EUG D1 – Bark Boiler			
Emission Point	**EU Name/Model**	**MMBTUH**	**Construction Date**
Bark Boiler Stack	Bark Boiler	Confidential	Pre-1972/1983

EUG D2 – Power Boiler			
Emission Point	**EU Name/Model**	**MMBTUH**	**Construction Date**
Main Stack	Power Boiler	Confidential	Pre-1972

The facility has taken limits on this previously grandfathered boiler. The facility has applied for a BART Waiver for the Power Boiler.

EUG D3 – Package Boiler			
Emission Point	**EU Name/Model**	**MMBTUH**	**Construction Date**
D3	Package (gas-fired) Boiler	Confidential	1985

This unit was constructed in Michigan in 1969, and then relocated to Valliant in 1985.

EUG D4 - Permitted, but will not be constructed.

EUG D5 – CFB Boiler			
Emission Point	**EU Name/Model**	**MMBTUH**	**Construction Date**
D5	CFB Boiler	Confidential	2008 (planed)

EUG D5-2 BFB Boiler			
Emission Point	**EU Name/Model**	**MMBTUH**	**Construction Date**
Main Stack	BFB Boiler	Confidential	2008 (planned)

EUG D6 – New Recovery Furnace (No.2) ***Formerly E3c***		
Emission Point	**EU Name/Model**	**Construction Date**
D6 (New Recovery Furnace Stack)	Recovery Furnace	2006

EUG E1 – Turpentine Recovery System		
Emission Point	**EU Name/Model**	**Construction Date**
D6 (New Recovery Furnace), or E7 (Lime Kiln) or D5 (CFB Boiler) (or D5-2 BFB Boiler) or F4 (NCG thermal oxidizer)	2-Stage Condenser (No. 1 Fiber Line)	Pre-1972
	Trim Condenser	
	Degasser No. 1	
	Turpentine Decanter No. 1	
	Underflow Tank No. 1	
	Mixed Underflow tank	
	Primary Condenser	
	Secondary Condenser (No. 2 Fiber Line)	
	Degasser No. 2	
	Turpentine Decanter No. 2	
	Underflow Tank No. 2	
	Turpentine Receiving Tank	
	Flash Steam Condenser (No. 3 Fiber Line)	

EUG E2a – Spent Liquor Concentration		
Emission Point	**EU Name/Model**	**Construction Date**
D6 (New Recovery Furnace), or E7 (Lime Kiln) or D5 (CFB Boiler) (or D5-2 BFB Boiler) or F4 (NCG thermal oxidizer)	No. 1 Evaporator Hotwell	Pre-1972/1981 / 2006
	No. 2 Evaporator Hotwell Crystalizer Super Concentrator System	

Evaporators are defined by 40 CFR Part 63, Subpart S to be an “LVHC” system.

EUG E2b – Evaporator Sewer Sump		
Emission Point	**EU Name/Model**	**Construction Date**
E2b,A	Evaporator Sewer Sump	Pre-1972

The evaporator sump is part of the wastewater collection system. As such, it does not meet the definitions in the Pulp & Paper MACT for either "evaporator system" or "process wastewater treatment system."

EUG E3a – Spent Liquor Mix Tank-Decommissioned 2006		
Emission Point	**EU Name/Model**	**Construction Date**
Main Stack	Spent Liquor Mix Tank/Spent Liquor Day Tank	Pre-1972

EUG E3b – Recovery Furnace-Decommissioned 2006

EUG E3c – see EUG D6

EUG E3d – Spent Liquor Mix Tank		
Emission Point	**EU Name/Model**	**Construction Date**
D6 (New Recovery Furnace Stack)	Spent Liquor Mix Tanks	2006

EUG E4a – Smelt Dissolving Tanks-Decommissioned		
Emission Point	**EU Name/Model**	**Construction Date**
E4a (Smelt Dissolving Tanks Stack)	Smelt Dissolving Tank "A"	Pre- 1972
	Smelt Dissolving Tank "B"	

EUG E4b – Smelt Dissolving Tank-2006		
Emission Point	**EU Name/Model**	**Construction Date**
D6 (New Recovery Furnace stack) or E4b (Smelt Dissolving Tank Emergency Vent)	Smelt Dissolving Tank	2006

EUG E5 – Lime Slakers		
Emission Point	**EU Name/Model**	**Construction Date**
E-E5, A (Lime Slaker Scrubber Stack)	No. 1 Lime Slaker	Pre-1972/1998
E-E5, B (Lime Slaker Scrubber Stack)	No. 2 Lime Slaker	

Permit No. 96-043-C (PSD) required that the stacks be extended or control devices added to reduce ambient PM impacts. This has been achieved.

EUG E6 – Causticizing System		
Emission Point	**EU Name/Model**	**Construction Date**
E6 (2 Stacks)	No. 1a Causticizer	Pre-1972/2001
	No. 2 Causticizer	
	No. 1b Causticizer	
	No. 3 Causticizer	

EUG E7a – Lime Kiln No. 1		
Emission Point	**EU Name/Model**	**Construction Date**
E7,A (Lime Kiln) Stack	Lime Kiln No. 1	Pre-1972/1992/2003 /2005
	No. 1 Lime Bin	
	No. 2 Lime Bin	
	No. 3 Lime Bin	

The Lime Kiln is subject to 40 CFR Part 63, Subpart S as a back-up air pollution control device. Subpart MM was promulgated on January 12, 2001, to regulate lime kilns directly, and the compliance date was March 13, 2004.

EUG E7b – Lime Kiln No. 2		
Emission Point	**EU Name/Model**	**Construction Date**
E7b,B (Lime Kiln) Stack	Lime Kiln No. 2	Proposed
	No. 4 Lime Bin	
	No. 5 Lime Bin	

EUG E8 – Tall Oil Plant			
Emission Point	**EU Name/Model**	**Construction Date**	
Main Stack	Tall Oil Plant which includes:	Pre-1972	
		Capacity, Gallons	**Construction Date**
	#1 Wet Tall Oil Tank	20,000	1970
	#2Wet Tall Oil Tank	20,000	1970
	Tall Oil Tank	153,000	1970

A scrubber was added to this unit in 1989. That addition reduced VOC emissions, therefore it was not defined as a “modification” requiring permitting. This EUG is a HVLC system, for which no standards are specified for existing equipment under the Pulp & Paper Industry MACT.

EUG E9 – Organic Liquid Storage Vessels are addressed in Section V, “Insignificant Activities.”

EUG E10 – Small Volatile Organic Liquids Storage Tanks are addressed in Section V, “Insignificant Activities.”

EUG F1 – Woodyard		
Emission Point	**EU Name/Model**	**Construction Date**
F1 (fugitive emissions)	Woodyard	Pre-1972

EUG F1a – Coal Material Handling (Bark Boiler)		
Emission Point	**EU Name/Model**	**Construction Date**
---	Coal Material Handling (Bark Boiler)	Planned

EUG F1b – Coal Material Handling (New)		
Emission Point	**EU Name/Model**	**Construction Date**
F1b	Coal Material Handling (New)	2008 (planned)

EUG F2 – Plant Traffic Road Emissions		
Emission Point	**EU Name/Model**	**Construction Date**
F2 (fugitive emissions)	Plant Traffic on Roads	Pre-1972

EUG F3a – Wastewater Treatment System		
Emission Point	**EU Name/Model**	**Construction Date**
F3b (fugitive emissions)	Solid Waste Disposal Facility Collection Pond	1991
	Chip Pile Runoff Pond	1991
	Process Sewer	Pre-1972
	Primary Effluent Clarifier	Pre-1972
	No. 1 Aeration Lagoon	Pre-1972
	No. 2 Aeration Lagoon	Pre-1972
	WWTS Emergency Storage Ponds	1983
F3,H	Sludge Press	1991
F3,I	Sludge Press	1991

* Terminology matches OPDES permit.

EUG F3b – Wastewater Pipeline		
Emission Point	**EU Name/Model**	**Construction Date**
F3b	Waste Water Pipeline	2003

EUG F4a – NCG Thermal Oxidizer **EUG F4b – LVHC/HVLC NCG Collection System**		
Emission Point	**EU Name/Model**	**Construction Date**
D6 (New Recovery Furnace), or E7 (Lime Kiln) or D5 (CFB Boiler) (or D5-2 BFB Boiler) or F4 (NCG thermal oxidizer)	Thermal Oxidation System LVHC Collection System HVLC Collection System	1989/2000
	No. 1 Digester System	
	No. 2 Digester System	
	No. 3 Digester System	
	Turpentine Recovery System	
	Spent Liquor Concentration	
	Steam Stripper System	

The thermal oxidizer has been decommissioned from normal operation, but it will be kept available as a backup control device.

EUG F5 – Landfill Operations		
Emission Point	**EU Name/Model**	**Construction Date**
F5 (fugitive emissions)	Solid Waste Disposal Facility	Pre-1984

EUG F6 – Diesel Stormwater Pump		
Emission Point	**EU Name/Model**	**Construction Date**
F6	166 HP Diesel Engine Driving a Water Pump	1995

EUG F7 – Wood Chip Screening and Conditioning Unit – No. 3 Line		
Emission Point	**EU Name/Model**	**Construction Date**
F7	Chip Bar Screen (Screening & Dropping)	1996
ADS-1	Air Density Separator	
F7	Chip Conditioner	

There is a gap in the sequence for F8, a unit which has been retired.

EUG F9 – Wood Chip Screening and Conditioning Unit – No. 1 Line		
Emission Point	**EU Name/Model**	**Construction Date**
F9	Chip Bar Screen (Screening & Dropping)	1998/ 2005
ADS-2	Air Density Separator	
F9	Chip Conditioner	
ADS-3	Air Density Separator	

EUG F10 – Steam Stripper System		
Emission Point	**EU Name/Model**	**Construction Date**
D6 (Recovery Furnace), or D5 (CFB Boiler), F4 (NCG Thermal Oxidizer)	Steam Stripper	2000
	Foul Condensate Storage Tank	

EUG F11 – Miscellaneous Insignificant Activities are addressed in Section V.

EUG F13 – Petcoke Handling System is addressed in Section V.

EUG F14 – Petcoke Handling System No.2 is addressed in Section V.

SECTION V. INSIGNIFICANT ACTIVITIES

The insignificant activities identified and justified in the application and listed in OAC 252:100-8, Appendix I, are listed below. Recordkeeping for activities indicated with an asterisk, "*", is listed in the Specific Conditions.

EUG E9 – Organic Liquid Storage Vessels			
Emission Point	**EU Name/Model**	**Capacity, Gallons**	**Construction Date**
164100010	No. 1 Weak Black Liquor Tank	793,090	1995
164100110	No. 2 Weak Black Liquor Tank	793,090	1995
164100210	Boilout Tank	426,263	1991
164101310	51% Black Liquor Tank	793,090	1994/2006
164101710	No. 2 Fuel Oil Storage Tank	1,523,381	1990
164101810	Neutral-Sulfite Semi-Chemical (NSSC) Weak Liquor Tank	842,428	1990
164102511	73% Black Liquor Storage Tank	408,769	1995/2006
E-E2,L	"Super Bowl" Temporary Storage Area	10,000,000	1990
164110110	Foul Condensate Storage (Steam Stripper Feed) Tank	350,000	2000
174102010	No. 2 Green Liquor Storage Tank	>20,000	1997
08301	80% Liquor Storage Tank	~125,000	2006

Due to the vapor pressure of the liquids per 60.110(b), Subpart Kb does not apply. By the definitions in Subpart S, the Valliant mill is considered an "existing" source. Therefore the black liquor storage tanks in this EUG are not regulated by Subpart S.

EUG E10 - Small Volatile Organic Liquids Storage Tanks			
Emission Point	**EU Name/Model**	**Capacity, Gallons**	**Construction Date**
GAS-01	Gasoline Fuel Tank	1,950	1987
034120510	Turpentine Storage Tank	28,000	1971

All other insignificant tanks are on the insignificant list.

EUG F11 – Miscellaneous Insignificant Activities		
Emission Point	**EU Name/Model**	**Construction Date**
F11-1	100 KW Caterpillar D100PI Emergency Generator	1971
F11-2	150 KW Caterpillar D336 Emergency Generator	1990
F11-3	700 KW Pipeline Basin Emergency Generator	2003
F11-4	25 KW Pipeline Valve House	

EUG F13 – Petcoke Handling System No. 1		
Emission Point	**EU Name/Model**	**Construction Date**
F13	Petcoke Handling System No. 1 and No.2	2005 (2008 Planned)

Emissions associated with the Petcoke Handling system are insignificant in nature.

* Stationary reciprocating engines burning natural gas, gasoline, aircraft fuels, or diesel fuel which are either used exclusively for emergency power generations or for peaking power service not exceeding 500 hours per year. The facility includes four diesel-powered emergency generators totaling 975 kW (1,307 HP) located at the facility.

Space heaters, boilers, process heaters, and emergency flares less than or equal to 5 MMBTUH heat input (commercial natural gas). This category includes the administration building boiler with 2.5 MMBTUH heat input.

* Emissions from fuel storage/dispensing equipment operated solely for facility owned vehicles if fuel throughput is not more than 2,175 gallons/day, averaged over a 30-day period. The facility includes a vehicle gasoline fueling tank (GAS-01). The mill also has several diesel tanks with a vapor pressure less than 1.0 psia and less than 10,000 gallons.

Gasoline and aircraft fuel handling facilities, equipment, and storage tanks except those subject to New Source Performance Standards and standards in OAC 252:100-37-15, 39-30, 39-41, and 39-48. The facility includes a diesel fuel dispensing operation.

* Emissions from storage tanks constructed with a capacity less than 39,894 gallons which store VOC with a vapor pressure less than 1.5 psia at maximum storage temperature. The facility includes a 28,000-gallon turpentine storage tank (EUG 10).

Site restoration and/or bioremediation activities of <5 years expected duration. None listed but may be conducted in the future.

Hydrocarbon-contaminated soil aeration pads utilized for soils excavated at the facility only. None listed but may be conducted in the future.

* Non-commercial water washing operations and drum crushing operations (less than 2,250 barrels/year) of empty barrels less than or equal to 55 gallons with less than three percent by volume of residual material. The facility includes a drum reclamation operation. The facility also occasionally disposes of empty barrels in the on-site landfill or recycles for scrap metal.

Hazardous waste and hazardous materials drum staging areas. The facility includes a waste accumulation area.

Sanitary sewage collection and treatment facilities other than incinerators and Publicly Owned Treatment Works (POTW). Stacks or vents for sanitary sewer plumbing traps are also included (i.e., lift station).

Emissions from landfills and land farms unless otherwise regulated by an applicable state or federal regulation. The facility operates a non-hazardous Solid Waste Disposal Facility (EUG F5).

Exhaust systems for chemical, paint, and/or solvent storage rooms or cabinets, including hazardous waste satellite (accumulation) areas. The facility includes additional chemical storage for maintenance purposes.

Hand wiping and spraying of solvents from containers with less than 1 liter capacity used for spot cleaning and/or degreasing in ozone attainment areas. These operations are conducted as part of routine maintenance.

* Activities having the potential to emit no more than 5 TPY (actual) of any criteria pollutant. The application listed a total of 241 insignificant activities. The insignificant activities included in this category are denoted as such in the insignificant activities list maintained on site.

SECTION VI. EMISSIONS

Valliant Mill has examined aspects of all major production areas at the plant to determine the maximum material process rates in order to calculate emission rates. Two distinct process rates for each production area or emissions unit have been determined:

- Maximum Short-Term Process Rate
- Maximum Sustainable Process Rate

The maximum short-term process rate is the maximum production rate achievable in a short time frame, for example, in one hour. The maximum sustainable process rate is the annual average of the estimated production rate at which a source can operate within its physical and operational design. In general, short-term (less than or equal to daily averaging periods) emissions are based on the maximum short-term process rates and long-term (greater than daily) average emissions are based on the maximum sustainable process rates.

The Valliant Mill has examined various sources to determine appropriate emission factors, including stack tests, mass balances, U.S. EPA AP-42, NCASI technical bulletins, vendor data, and regulatory limits. Weyerhaeuser used engineering judgment to determine the most suitable emission factor for a particular source. For most sources and pollutants, the selected "base emission factor" is then multiplied by a "safety factor" to obtain an "adjusted emission factor." A safety factor is applied to account for short-term fluctuations in emissions or anomalous stack test conditions that may have affected a given set of testing results. The adjusted emission factor can then be multiplied by a process rate to calculate an emission rate. It should be noted, however, that not all emission factors incorporate a safety factor.

The application has requested that all emission factors be kept confidential since they were the product of a lengthy and expensive research project.

Additional important rates have also been defined for:

- Baseline Emissions
- Baseline Accommodated
- Projected Actual

Baseline actual emissions are defined in 252:100-8-31(b) as:
For an existing emissions unit (other than an EUSGU), baseline actual emissions means the average rate in TPY, at which the emissions unit actually emitted the pollutant during any consecutive 24-month period selected by the owner or operator within the 10-year period immediately preceding either the date the owner or operator begins actual construction of the project, or the date a complete permit application is received by the Director for a permit required either under this Part or under a plan approved by the Administrator, whichever is earlier, except that the 10 year period shall not include any period earlier than November 15, 1990.

For the purposes of this project, the <u>baseline actual emissions</u> for existing sources is the consecutive 24 month period beginning in January 1, 2003 and ending December 31, 2004. Data was taken from annual emissions inventories 2003 and 2004, with exceptions for individual emissions units that had improved emissions information (e.g., new emission factors and/or stack test data).

In those cases, the new emission factors were used to calculate past actual emissions for consistency. Also note that a contingency factor has been added to the TRS and VOC emissions from plantwide fugitives to account for routine and/or upset emissions from non-combustion sources.

Baseline accommodated:
In some instances, the baseline actual emissions for affected sources were adjusted to account for accommodated emissions. The definition for 'baseline accommodated emissions' is part of the projected actual emissions definition found in 252:100-8-31(b):

…baseline actual emissions … *(iii) shall exclude, in calculating any increase in emissions that results from the particular project, that portion of the unit's emissions following the project that an existing unit could have accommodated during the consecutive 24-month period used to establish the baseline actual emissions and that are also unrelated to the particular project, including any increased utilization due to product demand growth,*

Projected actual emissions are defined in 252:100-8-31(b) as:
Projected actual emissions means the maximum annual rate, in TPY, at which an existing emissions unit is projected to emit a regulated NSR pollutant in any one of the 5 years (12-month period) following the date the unit resumes regular operation after the project, or in any one of the 10 years following that date, if the project involves increasing the emissions unit's design capacity or its potential to emit that regulated NSR pollutant, and full utilization of the unit would result in a significant emissions increase, or a significant net emissions increase at the major stationary source.

The projected actual emissions were utilized for the modified and affected sources in the project. In many cases, the projected actual was set at the emissions unit's potential to emit (PTE).

The emission calculation methodologies for the modified and associated sources are described in this section. Modified emission sources are sources that are currently operated with the existing plant which will be physically modified or replaced and continue operating after the project. Affected emission sources are sources that are currently operated in the Mill (e.g., prior to (M-4)) that will continue to be operated after the modification and are expected to have an actual emissions increase due to an increase in the capacity when compared to the previous capacity (e.g., prior to (M-4)).

To conclude, the accommodated emissions are part of the calculation of the project increase for each emission unit. There is no explicit definition in the rule for accommodated emissions. The calculation for a project increase for modified and affected units is defined in the rule as (paraphrased) future actual emissions minus the baseline actual emissions adjusted for the accommodated emissions. Therefore a project increase = projected - actual - (accommodated - actual). Project increases for new units is the potential to emit (PTE).

VOC emission limitations were initially expressed as carbon in the Title V permit application as well as in previous permits for this facility because "as-carbon" was used in the mid-1980s, since Method 25A actually measured a signal given off by carbon reacting with oxygen in the instrument. If the organic molecules had single bonds, double bonds, or even triple bonds, the signal was the same. So since the measurement method couldn't distinguish the actual form of the VOC, EPA (Laxmi Kesari) sent out a guidance document allowing the wood products industry to express VOC as carbon. By 1996, EPA reversed their position and said VOC should be shown as it actually is emitted. Remembering the limitations of Method 25A, you have to convert the measured results to an as-emitted molecular weight. For most wood products, EPA recommended as alpha-pinene ($C_{10}H_{16}$), which means multiplying the as-carbon weight by 1.13. For most combustion sources, as-propane is sufficiently conservative; you multiply the as-carbon value by 1.22. These work unless you have a significant amount of oxygen in the VOC, as with methanol or formaldehyde. Only the paper machines and wastewater treatment units have much methanol. In these the "as-carbon" emissions have been multiplied by 2.7. More recent guidance from EPA (June 2006) indicates no data is readily available for pulp and paper mills. For purposes of New Source Review applicability determination, VOCs have been evaluated with alpha-pinene for the chip handling, chip and bark stacks, etc., methanol for the waste water treatment system, paper machines, and other process areas, and propane for all other sources.

HAP's and SubChapter 42 Pollutant Emissions

The post-project emissions of Subchapter 42 compounds for each primary source at the Valliant Mill were determined using emission factors taken from National Council of the Paper Industry for Air and Stream Improvement (NCASI) Technical Bulletins, United States Environmental Protection Agency (U.S. EPA) AP-42 reference documents, or mill data.[2] The following sections discuss each data source.

The following NCASI reports were used to determine the post-project emissions for the Valliant Mill:

- Technical Bulletin 650 –dated June 7, 1993
- Technical Bulletin 676 –dated September 9, 1994
- Technical Bulletin 677 –dated September 23, 1994
- Technical Bulletin 678 –dated October 5, 1994
- Technical Bulletin 680 –dated October 24, 1994
- Technical Bulletin 681 –dated October 31, 1994
- Technical Bulletin 701 –dated October 20, 1995
- NCASI Handbook of Chemical-Specific Information for SARA 313 Form R Reporting

The U.S. EPA AP-42 emission factors used in this report are located in Chapter 1.1 (September 1998), Chapter 1.3(September 1998), Chapter 1.4 (July 1998), Chapter 1.6 (September 2003), and Chapter 3.3 (October 1996) of the U.S. EPA AP-42 reference documents.

MILL DATA

Since every pulp and paper product manufacturing facility is unique, the NCASI bulletins and U.S. EPA AP-42 reference documents do not always contain sufficient data to accurately estimate emissions of all Subchapter 42 compound emissions. When appropriate, engineering judgment was used to apply mill data, which may or may not be specific to the Valliant Mill, to estimate post-project emissions of Subchapter 42 compounds.

HAP Emissions

CAS Number	HAP	Emissions	
		lb/hr	TPY
75070	Acetaldehyde	6.21	27.20
98862	Acetophenone	0.13	0.57
107028	Acrolein	1.47	6.40
71432	Benzene	1.20	5.27
92524	Biphenyl	0.04	0.19
75150	Carbon disulfide	0.37	1.60
56235	Carbon tetrachloride	3.42	14.97
463581	Carbonyl sulfide	0.01	0.04
108907	Chlorobenzene	0.29	1.27
67663	Chloroform	2.83	12.39
98828	Cumene	0.16	0.70
100414	Ethyl benzene	0.19	0.85
50000	Formaldehyde	12.11	53.06
118741	Hexachlorobenzene	<0.01	<0.01
77474	Hexachlorocyclopentadiene	0.02	0.09
110543	Hexane	3.27	14.33
7647010	Hydrochloric acid	10.76	47.15
67561	Methanol	354.11	1,551.02
108101	Methyl isobutyl ketone	3.82	16.74
75092	Methylene chloride	2.33	10.22
108383	m-Xylene	0.94	4.11
91203	Naphthalene	0.36	1.59
95476	o-Xylene	0.65	2.86
108952	Phenol	0.27	1.19
7723140	Phosphorus	0.10	0.44
123386	Propionaldehyde	0.26	1.12
106423	p-Xylene	1.42	6.20
7782492	Selenium	0.14	0.61
100425	Styrene	1.54	6.75
108883	Toluene	0.80	3.50
79016	Trichloroethylene	1.68	7.36
108054	Vinyl acetate	0.01	0.03
75014	Vinyl chloride	0.02	0.08
79005	1,1,2-Trichloroethane	1.07	4.70
120821	1,2,4-Trichlorobenzene	2.95	12.94
TOTAL		**414.95**	**1,817.54**

PSD Evaluation Methodology

A PSD netting analysis is performed in two major steps: (1) evaluating the proposed modification by itself and, if necessary, (2) conducting emissions netting over the contemporaneous period.

1. Compare emissions increases associated with only the proposed modification to the PSD SER thresholds. Emissions increases associated with the proposed modification include increases at new and modified units, as well as "associated emissions increases" at existing, unmodified units. For new, modified, and affected units, emissions increases are determined by subtracting actual emission rates from the proposed potential emission rates for that unit. In accordance with federal [40 CFR 52.21(b)(21)(iii)] and state (OAC 252:100-8-31) regulations, two methods are available to compute past actual emissions:

- Average the emissions from the two years preceding the change or from a two-year period representative of normal operations, or,
- The DEQ may presume that source-specific allowable emissions for a unit are equivalent to the "actual emissions" of a unit.

If emissions increases from the proposed modification alone (without considering any decreases) are below all applicable PSD SERs, then the modification is not significant and is not required to undergo PSD review. If emissions increases from the modification alone are greater than any SER, then the modification must undergo PSD netting to determine PSD applicability for that pollutant. The comparison is conducted on a pollutant-by-pollutant basis, so PSD netting may be required for some pollutants and not for others. Since the Valliant Mill qualifies as one of the 28 PSD source categories for which the 100 TPY major source thresholds applies, emissions increases from fugitive sources, such as roads, must also be included in the PSD netting analysis, so a full PSD netting analysis was completed.

2. If the modification alone is significant, conduct PSD netting. The netting analysis is conducted in three steps: (A) defining the contemporaneous period, (B) identifying contemporaneous emissions increases and decreases, and (C) calculating the net emissions change.

A. Define contemporaneous period. In Oklahoma, the contemporaneous period begins with the date three years prior to the date construction commences on the proposed project and ends with the date the net emissions change from the modification occurs (i.e., when construction is complete and normal operations have begun for the proposed/modified units).

B. Identify emissions increases/decreases. All creditable emissions increases and decreases that occurred at the plant site during the contemporaneous period are summed together. In general, these contemporaneous emissions increases and decreases are calculated as the difference between the average of the last two years of actual emissions prior to the change and the allowable emissions after the change for each individual emissions unit. Any "double-counted" emissions are removed.

C. Calculate net emissions increase. The emissions changes associated with the new modification are added to the contemporaneous increases and decreases to determine the net emissions change. In addition, emission rates previously relied upon in the issuance of a PSD permit are removed from this summation. If the net emissions change of any pollutant exceeds a corresponding PSD SER, then that pollutant is subject to PSD review.

PSD Evaluation for the Proposed Project

A PSD evaluation of the proposed project is discussed in the following subsections for the following criteria pollutants: particulate matter with an aerodynamic diameter less than 10 microns (PM_{10}), carbon monoxide (CO), sulfur dioxide (SO_2), oxides of nitrogen (NO_x), VOC, TRS, lead (Pb), and SAM (H_2SO_4).

PSD Netting Analysis

Emissions netting is a term that refers to the process of considering certain previous and prospective emissions changes at an existing major source to determine the total net emissions increase of a pollutant that will result from a proposed physical change or change in the method of operation. OAC 252:100-8(b)(3) through (5) defines a net emission increase as:

> ***Actual-to-projected-actual applicability test for projects that only involve existing emissions units.*** *A significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the difference between the projected actual emissions and the baseline actual emissions for each existing emissions unit, equals or exceeds the amount that is significant for that pollutant.*
> ***Actual-to-potential test for projects that only involve construction of a new emissions unit(s).*** *A significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the difference between the potential to emit from each new emissions unit following completion of the project and the baseline actual emissions of these units before the project equals or exceeds the amount that is significant for that pollutant.*
> ***Hybrid test for projects that involve multiple types of emissions units.*** *A significant emissions increase of a regulated NSR pollutant is projected to occur if the sum of the emissions increases for each emissions unit, using the method specified in OAC 252:100-8-30(b)(3) or (4) as applicable with respect to each emissions unit, for each type of emissions unit equals or exceeds the amount that is significant for that pollutant. For example, if a project involves both an existing emissions unit and a new emissions unit, the projected increase is determined by summing the values determined using the method specified in OAC 252:100-8-30(b)(3) for the existing unit and determined using the method specified in 252:100-8-30(b)(4) for the new emissions unit."*

This project will use the hybrid test for determining PSD applicability because it involves both new equipment (i.e., CFB/BFB Boiler) and existing emissions units (i.e., Brownstock washer areas).

Definition of Actual Emissions

Actual emissions are defined in 252:100-8-31(b) as:

> *"The actual rate of emissions of a regulated NSR pollutant from an emissions unit, as determined in accordance with paragraphs (A) through (C) of this definition, except that this definition shall not apply for calculating whether a significant emissions increase has occurred, or for establishing a PAL under OAC 252:100-8-38. Instead, the definitions of "projected actual emissions" and "baseline actual emissions" shall apply for those purposes.*
>
> *(A) In general, actual emissions as of a particular date shall equal the average rate in TPY at which the unit actually emitted the pollutant during a consecutive 24-month period which precedes the particular date and which is representative of normal source operation. The Director shall allow the use of a different time period upon a determination that it is more representative of normal source operation. Actual emissions shall be calculated using the unit's actual operating hours, production rates, and types of materials processed, stored, or combusted during the selected time period.*
> *(B) The Director may presume that source-specific allowable emissions for the unit are equivalent to the actual emissions of the unit.*
> *(C) For any emissions unit that has not begun normal operations on the particular date, actual emissions shall equal the potential to emit of the unit on that date."*

Definition of Baseline Actual Emissions

Baseline actual emissions are defined in 252:100-8-31(b) as:

> *For an existing emissions unit (other than an EUSGU), baseline actual emissions means the average rate in TPY, at which the emissions unit actually emitted the pollutant during any consecutive 24-month period selected by the owner or operator within the 10-year period immediately preceding either the date the owner or operator begins actual construction of the project, or the date a complete permit application is received by the Director for a permit required either under this Part or under a plan approved by the Administrator, whichever is earlier, except that the 10 year period shall not include any period earlier than November 15, 1990.*

For the purposes of this project, the baseline actual emissions for existing sources will be the consecutive 24 month period beginning in January 1, 2003 and ending December 31, 2004. This period precedes the actual construction under (M-4). Data on the baseline actual emissions were taken from the Annual Emissions Inventories for 2003 and 2004, with exceptions for individual emissions units that had better emissions information (e.g., new emission factors and/or stack test data). In those cases, the new emission factors were used to calculate past actual emissions for consistency. Also note that a contingency factor has been added to the TRS and VOC emissions from plantwide fugitives to account for routine and/or upset emissions from non-combustion sources. All excess NCG emissions will comply with these emission limits and be reported with a point even though the point is not normally an emission point.

Definition of Contemporaneous

Emission increases and decreases that are contemporaneous are those that have occurred during the contemporaneous period. According to OAC 252:100-8-31(b), "contemporaneous" is defined such that:

"An increase or decrease in actual emissions is contemporaneous with the increase from the particular change only if it occurs within 3 years before the date that the increase from the particular change occurs".

Weyerhaeuser has interpreted the contemporaneous period to be three years prior to start of construction through the start of operation of the final element of Phase III. Weyerhaeuser initiated construction of the CRF project in February of 2005 and is estimated to begin construction of the proposed final phase of modifications in October of 2012. Therefore, the contemporaneous period for the proposed modification is approximately February 2002 to October 2014. Weyerhaeuser will update the DEQ per OAC 100-8-1-4 should this schedule change.

Definition of Projected Actual Emissions

Projected actual emissions are defined in 252:100-8-31(b) as:

(A) Projected actual emissions means the maximum annual rate, in TPY, at which an existing emissions unit is projected to emit a regulated NSR pollutant in any one of the 5 years (12-month period) following the date the unit resumes regular operation after the project, or in any one of the 10 years following that date, if the project involves increasing the emissions unit's design capacity or its potential to emit that regulated NSR pollutant, and full utilization of the unit would result in a significant emissions increase, or a significant net emissions increase at the major stationary source.

(i) shall consider all relevant information, including but not limited to, historical operational data, the company's own representations, the company's expected business activity and the company's highest projections of business activity, the company's filings with the State or Federal regulatory authorities, and compliance plans under the approved plan; and (ii) shall include fugitive emissions to the extent quantifiable and emissions associated with start-ups, shutdowns, and malfunctions; and
(iii) shall exclude, in calculating any increase in emissions that results from the particular project, that portion of the unit's emissions following the project that an existing unit could have accommodated during the consecutive 24-month period used to establish the baseline actual emissions and that are also unrelated to the particular project, including any increased utilization due to product demand growth; or,
(iv) in lieu of using the method set out in (B)(i) through (iii) of this definition, may elect to use the emissions unit's potential to emit, in TPY.

Projected actual emissions will be utilized for the modified and affected sources in the project. In many cases, the projected actual is set at the emissions unit's PTE.

Project emissions increases

The emission calculation methodologies for the modified and associated sources are described in this section. Modified emission sources are sources that are currently operated with the existing plant which will be physically modified or replaced and continue operating after the project. Affected emission sources are sources that are currently operated in the Mill (e.g., prior to (M-4)) that will continue to be operated after the modification and are expected to have an actual emissions increase due to an increase in the capacity when compared to the previous capacity (e.g., prior to (M-4)).

Creditable Emission Increases and Decreases

Weyerhaeuser has included creditable, contemporaneous emission increases and decreases in the netting analysis. The creditable, contemporaneous emission increases and decreases are the changes in actual emissions that will occur as a result of physical changes that Weyerhaeuser has already made, or will make, during the contemporaneous period. The construction at the Mill has and will occur in three distinct phases as described in Section I of this permit **memorandum.**

The netting analysis for each phase of construction includes the creditable emissions increases and decreases from each previous phase, which ensures netting integrity over the life of the entire construction project. Therefore, Phase III represents all the emissions changes associated with this permit modification.

Project Emissions Increase

This project will use the hybrid test outlined in OAC 252:100-8(b)(3) through (5) for determining PSD applicability because it involves both new equipment (i.e., CFB/BFB Boiler) and affected emissions units (i.e., Power Boiler).

For all new and modified emissions increases are calculated by subtracting the past actual emission rate from the proposed potential emission rate. Emissions for the affected units were calculated by comparing the projected actual emissions (excluding that portion of the unit's emissions following the project that the existing unit could have accommodated during the consecutive 24-month period used to establish the baseline actual emissions) to the past actual emissions.

Using this methodology, the project emissions increases attributable to the proposed project are presented for comparison to PSD SERs in the following tables.

Total Emission Increases and Decreases – Phase I

		PM_{10}			CO			SO_2			NO_x			VOC			TRS			Lead			H_2SO_4		
ID	**Emission Unit**	**BA (tpy)**	**PA (tpy)**	**PC (tpy)**	**BA (tpy)**	**PA (tpy)**	**PC (tpy)**	**BA (tpy)**	**PA (tpy)**	**PC (tpy)**	**BA (tpy)**	**PA (tpy)**	**PC (tpy)**	**BA (tpy)**	**PA (tpy)**	**PC (tpy)**	**BA (tpy)**	**PA (tpy)**	**PC (tpy)**	**BA (tpy)**	**PA (tpy)**	**PC (tpy)**	**BA (tpy)**	**PA (tpy)**	**PC (tpy)**
A4-A6	Total OCC Plants	--	--	--	--	--	--	--	--	--	--	--	--	82.4	99.6	17.2	--	--	--	--	--	--	--	--	--
A8	OCC Lightweight Rejects Baghouse	1.9	1.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B1	No. 1 Brownstock Washer	--	--	--	--	--	--	--	--	--	--	--	--	86.6	108.6	22.0	2.7	3.4	0.7				--	--	--
B2	No. 2 Brownstock Washer	--	--	--	--	--	--	--	--	--	--	--	--	46.4	77.6	31.2	1.4	2.4	1.0				--	--	--
B3	No. 3 Brownstock Washer	--	--	--	--	--	--	--	--	--	--	--	--	26.6	58.2	31.5	0.8	1.8	1.0				--	--	--
	Total Brownstock Washers													159.6	244.4	84.8	5.0	7.6	2.6						
C1-C3	No. 1 Paper Machine	12.2	13.1	1.0	--	--	--	--	--	--	--	--	--	1,048.4	1,133.8	85.4	--	--	--	--	--	--	--	--	--
C4-C6	No. 2 Paper Machine	5.7	6.4	0.6	--	--	--	--	--	--	--	--	--	494.7	548.0	53.3	--	--	--	--	--	--	--	--	--
C7-C9	No. 3 Paper Machine	5.5	6.6	1.0	--	--	--	--	--	--	--	--	--	477.7	566.9	89.2	--	--	--	--	--	--	--	--	--
D1	Bark Boiler	306.6	306.6	--	11,399.4	11,399.4	--	254.5	254.5	--	840.1	840.1	--	174.3	174.3	--	--	--	--	0.3	0.3	--	76.1	76.1	--
D2	Power Boiler	658.3	508.5	(149.8)	340.9	263.3	(77.6)	6,512.2	6,512.2	--	3,935.8	3,040.1	(158.4)	27.5	21.2	(6.3)	--	--	--	0.1	0.1	(0.2)	86.0	66.5	(19.5)
D3	Package Boiler	6.5	6.5	--	55.9	55.9	--	0.4	0.4	--	74.6	74.6	--	59.1	59.1	--	--	--	--		--	--			
D6	Recovery Furnace (New) firing BLS	0.0	159.8	159.8	0.0	266.9	266.9	0.0	627.2	627.2	0.0	906.3	906.3	0.0	115.4	115.4	0.0	20.3	20.3	--	--	--	0.0	10.0	10.0
D6g	Recovery Furnace (New) firing nat. gas	--	--	--	0.0	3.6	3.6	--	--	--	0.0	9.6	9.6	0.0	0.3	0.3	--	--	--	--	--	--	--	--	--
E2a	Evaporator Sump	--	--	--	--	--	--	--	--	--	--	--	--	138.9	213.0	74.2	42.4	65.1	22.6	--	--	--	--	--	--
E3	Recovery Furnace (Old) *Decommissioned*	242.0	0.0	(242.0)	1,640.5	0.0	(1,640.5)	1,116.0	0.0	(1,116.0)	624.8	0.0	(624.8)	51.9	0.0	(51.9)	148.2	0.0	(148.2)	0.1	0.0	(0.1)	8.0	0.0	(8.0)
E3a	Spent Liquor Mix Tanks (Decommissioned)	--	--	--	--	--	--	--	--	--	--	--	--	0.6	0.0	(0.6)	7.2	0.0	(7.2)	--	--	--	--	--	--
E4	Smelt Dissolving Tank *Decommissioned*	204.2	0.0	(204.2)	59.8	0.0	(59.8)	4.1	0.0	(4.1)	10.5	0.0	(10.5)	5.0	0.0	(5.0)	2.8	0.0	(2.8)	--	--	--	--	--	--
E5-1	Lime Slakers (total flow)	0.3	0.4	0.1	--	--	--	--	--	--	--	--	--	190.3	219.3	28.9	0.5	0.6	0.1	--	--	--	--	--	--
E6	Causticizing System	--	--	--	--	--	--	--	--	--	--	--	--	176.5	203.3	26.8	0.5	0.6	0.1	--	--	--	--	--	--
E7a	Lime Kiln System (Total)	4.8	5.4	0.6	89.9	101.1	11.14	36.2	40.7	4.5	124.7	140.2	15.5	29.7	33.4	3.7	5.9	6.7	0.7	0.3	0.3	--	1.2	1.4	0.2
E8	Tall Oil Plant	--	--	--	--	--	--	--	--	--	--	--	--	370.4	370.4	--	1.6	1.6	--	--	--	--	--	--	--

* BA: Baseline Accommodated emissions, PA: Projected Actual emissions, PC: Projected change in emissions

Total Emission Increases and Decreases – Phase I, cont'd.

		PM_{10}			CO			SO_2			NO_x			VOC			TRS			Lead			H_2SO_4		
ID	Emission Unit	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)
F1 -fs	Fiber Source Material Storage Piles and Stacking/Reclaiming	1.9	1.9	--	--	--	--	--	--	--	--	--	--	1.4	1.4	--	--	--	--	--	--	--	--	--	--
F1 -hf	Hog Fuel Material Handling	0.4	0.4	--	--	--	--	--	--	--	--	--	--	0.3	0.3	--	--	--	--	--	--	--	--	--	--
F2-lt	Landfill Trucks	0.0	0.5	0.5													--	--	--	--	--	--	--	--	--
F2-pt	Plant Trucks	0.5	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F3a	Wastewater Treatment System	25.9	25.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F3b	Wastewater Pipeline	--	--	--	--	--	--	--	--	--	--	--	--	824.6	1,265.0	440.3	82.7	126.8	44.1	--	--	--	--	--	--
F4	NCG Thermal Oxidizer *Decommissioned*	--		--	--	--	--	--	--	--	--	--		--	--	--	8.0	8.7	0.6	--	--	--	--	--	--
F5	Landfill Operations & Unloading Dumps	2.0	2.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F6	Diesel Stormwater Pump	0.1	0.1	--	5.9	5.9	--	0.3	0.3	--	17.1	17.1	--	--	--	--	--	--	--	--	--	--	--	--	--
F7/F9	Wood Chip Screening and Conditioning Area	1.5	1.5	--	--	--	--	--	--	--	--	--	--	0.7	0.7	--	--	--	--	--	--	--	--	--	--
F14	Petcoke Silo Bin Vent No. 1	3.4	5.2	1.8	--	--	--	--	--	--	--	--	--	12.5	19.1	6.7	--	--	--	--	--	--	--	--	--
FW	Plant-Wide Fugitives	--	--	--	--	--	--	--	--	--	--	--	--	528.9	528.9	--	27.7	23.8	(3.4)	--	--	--	--	--	--
TOTAL PROJECT EMISSION DECREASES (tpy)		(468.2)			(1,701.1)			(1,120.2)			(896.5)			(57.5)			(161.7)			(0.3)			(10.1)		
TOTAL PROJECT EMISSION INCREASES (tpy)		165.3			281.7			631.7			931.3			1,026.2			91.2			0.0			10.1		
PSD SIGNIFICANCE THRESHOLD		15.0			100.0			40.0			40.0			40.0			10.0			0.6			7.0		
EXCEEDED THRESHOLD?		YES			YES			YES			YES			YES			YES			NO			YES		
TOTAL CREDITABLE EMISSION CHANGES (tpy)		(302.8)			(1,419.5)			(488.5)			34.8			968.7			(70.5)			(0.2)			>0.1		

* BA: Baseline Accommodated emissions, PA: Projected Actual emissions, PC: Projected change in emission

Total Emission Increases and Decreases – Phase II

		PM_{10}			CO			SO_2			NO_x			VOC			TRS			Lead			H_2SO_4		
ID	Emission Unit	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)
A4-A6	Total OCC Plants	--	--	--	--	--	--	--	--	--	--	--	--	82.4	99.6	17.2	--	--	--	--	--	--	--	--	--
A8	OCC Lightweight Rejects Baghouse	1.9	1.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B1	No. 1 Brownstock Washer	--	--	--	--	--	--	--	--	--	--	--	--	86.6	108.6	22.0	2.7	3.4	(0.7)	--	--	--	--	--	--
B2	No. 2 Brownstock Washer	--	--	--	--	--	--	--	--	--	--	--	--	46.4	77.6	31.2	1.4	2.4	1.0	--	--	--	--	--	--
B3	No. 3 Brownstock Washer	--	--	--	--	--	--	--	--	--	--	--	--	26.6	58.2	31.5	0.8	1.8	1.0	--	--	--	--	--	--
	Total Brownstock Washers			--			--			--			--	159.5	244.4	84.8	5.0	7.6	2.6			--			--
C1-C3	No. 1 Paper Machine	12.2	13.1	1.0	--	--	--	--	--	--	--	--	--	1,048.4	1,133.8	85.4	--	--	--	--	--	--	--	--	--
C4-C6	No. 2 Paper Machine	5.7	6.4	0.6	--	--	--	--	--	--	--	--	--	494.7	548.0	53.3	--	--	--	--	--	--	--	--	--
C7-C9	No. 3 Paper Machine	5.5	6.6	1.0	--	--	--	--	--	--	--	--	--	477.7	566.9	89.2	--	--	--	--	--	--	--	--	--
D1	Bark Boiler	306.6	306.6	--	11,399.4	11,399.4	--	254.5	254.5	--	840.1	840.1	--	174.3	174.3	--	--	--	--	0.3	0.3	--	76.1	76.1	--
D2	Power Boiler	658.3	665.8	7.5	340.9	344.8	3.9	6,512.2	6,512.2	--	3,935.8	1,990.3	(1,208.3)	27.5	26.7	(0.8)	--	--	--	0.1	0.1	--	86.0	87.0	1.0
D3	Package Boiler	6.5	8.3	1.8	55.9	71.1	15.2	0.4	0.6	0.1	74.6	94.9	20.3	59.1	72.1	13.0			--			--			--
D6	Recovery Furnace (New) firing BLS	0.0	190.1	190.1	0.0	317.5	317.5	0.0	746.1	746.1	0.0	1,078.1	1,078.1	0.0	137.3	137.3	0.0	24.1	24.1	--	--	--	0.0	11.9	11.9
D6g	Recovery Furnace (New) firing nat gas	--	--	--	0.0	189.4	189.4	--	--	--	0.0	503.7	503.7	0.0	14.5	14.5	--	--	--	--	--	--	--	--	--
E2a	Evaporator Sump	--	--	--	--	--	--	--	--	--	--	--	--	138.9	213.0	74.2	42.4	65.1	22.6	--	--	--	--	--	--
E3	Recovery Furnace (Old) *Decommissioned*	242.0	0.0	(242.0)	1,640.5	0.0	(1,640.5)	1,116.0	0.0	(1,116.0)	624.8	0.0	(624.8)	51.9	0.0	(51.9)	148.2	0.0	(148.2)	0.1	0.0	(0.1)	8.0	0.0	(8.0)
E3a	Spent Liquor Mix Tanks (Decommissioned)	--	--	--	--	--	--	--	--	--	--	--	--	0.6	0.0	(0.6)	7.2	0.0	(7.2)	--	--	--	--	--	--
E4	Smelt Dissolving Tank *Decommissioned*	204.2	0.0	(204.2)	59.8	0.0	(59.8)	4.1	0.0	(4.1)	10.5	0.0	(10.5)	5.0	0.0	(5.0)	2.8	0.0	(2.8)	--	--	--	--	--	--
E5-1	Lime Slakers (total flow)	0.3	0.4	0.1	--	--	--	--	--	--	--	--	--	190.3	219.3	28.9	0.5	0.6	0.1	--	--	--	--	--	--
E6	Causticizing System	--	--	--	--	--	--	--	--	--	--	--	--	176.5	203.3	26.8	0.5	0.6	0.1	--	--	--	--	--	--
E7a	Lime Kiln System (Total)	4.8	8.0	3.3	67.1	151.2	84.2	36.2	60.9	24.7	124.7	209.7	85.0	29.7	40.6	10.9	5.9	10.0	4.1	0.3	0.5	0.2	1.2	1.66	0.42
E8	Tall Oil Plant	--	--	--	--	--	--	--	--	--	--	--	--	370.4	370.4	--	1.6	1.6	--	--	--	--	--	--	--

* BA: Baseline Accommodated emissions, PA: Projected Actual emissions, PC: Projected change in emissions

Total Emission Increases and Decreases – Phase II, cont'd.

		PM_{10}			CO			SO_2			NO_x			VOC			TRS			Lead			H_2SO_4		
ID	Emission Unit	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)
F1 -fs	Fiber Source Material Storage Piles and Stacking/Reclaiming	1.9	1.9	--	--	--	--	--	--	--	--	--	--	1.4	1.4	--	--	--	--	--	--	--	--	--	--
F1 - hf	Hog Fuel Material Handling	0.4	0.4	--	--	--	--	--	--	--	--	--	--	0.3	0.3	--	--	--	--	--	--	--	--	--	--
F13	Petcoke Silo Bin Vent No. 1	0.0	0.5	0.5	--	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--	--	--
F14	Petcoke Silo Bin Vent No. 2	0.0	0.5	0.5	--	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--	--	--
F1-c	Coal Material Storage Piles & Stacking/Reclaiming		0.5	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F2-lt	Landfill Trucks	0.5	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F2-pt	Plant Trucks	25.9	25.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F3a	Wastewater Treatment System	--	--	--	--	--	--	--	--	--	--	--	--	824.6	1,265.0	440.3	82.7	126.8	44.1	--	--	--	--	--	--
F3b	Wastewater Pipeline	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.0	8.7	0.6	--	--	--	--	--	--
F4	SOG/NCG combustion in the Lime Kiln	0.0	22.0	22.0	0.0	0.9	0.9	--	--	--	--	102.8	102.8	0.0	0.03	0.03	0.0	0.1	0.1	--	--	--	0.0	2.1	2.1
F5	Landfill Operations & Unloading Dumps	2.0	2.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F6	Diesel Stormwater Pump	1.5	1.5	--	5.9	5.9	--	0.3	0.3	--	17.1	17.1	--	0.7	0.7	--	--	--	--	--	--	--	--	--	--
F7/F9	Wood Chip Screening and Conditioning Area	3.4	5.2	1.8	--	--	--	--	--	--	--	--	--	12.5	19.1	6.7	--	--	--	--	--	--	--	--	--
FW	Plant-Wide Fugitives	--	--	--	--	--	--	--	--	--	--	--	--	528.9	536.1	7.2	27.7	24.5	(2.7)	--	--	--	--	--	--
TOTAL PROJECT EMISSION DECREASES		(446.1)			(1,700.2)			(1,120.2)			(1,843.6)			(58.3)			(160.9)			(0.2)			(8.0)		
TOTAL PROJECT EMISSION INCREASES		230.6			611.06			771.0			1,789.9			1,088.1			98.5			0.2			15.4		
PSD SIGNIFICANCE THRESHOLD		15.0			100.0			40.0			40.0			40.0			10.0			0.6			7.0		
EXCEEDED THRESHOLD?		YES			YES			YES			YES			YES			YES			NO			YES		
TOTAL CREDIT. EMISSION CHANGES		(215.6)			(1,089.2)			(349.2)			(53.7)			1,029.8			(62.4)			(0.0)			7.4		

* BA: Baseline Accommodated emissions, PA: Projected Actual emissions, PC: Projected change in emissions

Total Emission Increases and Decreases – Phase IIIA

		PM_{10}			CO			SO_2			NO_x			VOC			TRS			Lead			H_2SO_4		
ID	Emission Unit	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)
A4 -A6	Total OCC Plants	--	--	--	--	--	--	--	--	--	--	--	--	82.4	99.6	17.2	--	--	--	--	--	--	--	--	--
A8	OCC Lightweight Rejects Baghouse	1.9	1.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
A8b	New OCC Lightweight Rejects Baghouse for new boiler	0.0	1.9	1.9	--	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--	--	--
B1	No. 1 Brownstock Washer	--	--	--	--	--	--	--	--	--	--	--	--	86.6	108.6	22.0	2.7	3.4	0.7	--	--	--	--	--	--
B2	No. 2 Brownstock Washer	--	--	--	--	--	--	--	--	--	--	--	--	46.4	77.6	31.2	1.4	2.4	1.0	--	--	--	--	--	--
B3	No. 3 Brownstock Washer	--	--	--	--	--	--	--	--	--	--	--	--	26.6	58.2	31.5	0.8	1.8	1.0	--	--	--	--	--	--
B4	Total Brownstock Washers			--			--			--	--	--	--	159.6	244.4	84.8	5.0	7.6	2.6			--			
C1-C3	No. 1 Paper Machine	12.2	13.1	1.0	--	--	--	--	--	--	--	--	--	1,048.4	1,133.8	85.4	--	--	--	--	--	--	--	--	--
C4-C6	No. 2 Paper Machine	5.7	6.4	0.6	--	--	--	--	--	--	--	--	--	494.7	548.0	53.3	--	--	--	--	--	--	--	--	--
C7-C9	No. 3 Paper Machine	5.5	6.6	1.0	--	--	--	--	--	--	--	--	--	477.7	566.9	89.2	--	--	--	--	--	--	--	--	--
D1	Bark Boiler	306.6	112.5	(194.1)	11,399.4	7175.4	(4,224.0)	254.5	211.1	(43.4)	840.1	253.2	(586.9)	174.3	45.	(128.4)	--	--	--	0.3	0.1	(0.2)	76.1	0.0	(76.1)
D2	Power Boiler	658.3	665.8	7.5	340.9	344.8	3.9	6,512.0	1,220.0	(566.2)	3,935.8	995.1	(2,203.4)	27.5	27.8	0.3	--	--	--	0.1	0.1	(0.1)	86.0	87.0	1.0
D3	Package Boiler	6.5	8.3	1.8	55.9	71.1	15.2	0.4	0.6	0.1	74.6	94.9	20.3	59.1	75.2	16.1	--	--	--			--			
D5	CFB Boiler (New)	--	207.2	207.2	--	2,486.1	2,486.1	--	953.0	953.0	--	828.7	828.7	--	49.7	49.7	--	--	--	0.0	0.8	0.8	0.0	43.8	43.8
D6	Recovery Furnace (New) firing BLS	0.0	190.1	190.1	0.0	338.7	338.7	0.0	746.1	746.1	0.0	1,078.1	1,078.1	0.0	137.3	137.3	0.0	24.1	24.1	--	--	--	0.0	11.9	11.9
D6g	Recovery Furnace (New) firing nat gas	--	--	--	0.0	318.9	318.9	--	--	--	0.0	848.1	848.1	0.0	25.5	25.5	--	--	--	--	--	--	--	--	--
E2a	Evaporator Sump	--	--	--	--	--	--	--	--	--	--	--	--	138.9	213.0	74.2	42.4	65.1	22.6	--	--	--	--	--	--
E3	Recovery Furnace (Old) *Decommissioned*	242.0	0.0	(242.0)	1,640.5	0.0	(1,640.5)	1,116.0	0.0	(1,116.0)	624.8	0.0	(624.8)	51.9	0.0	(51.9)	148.2	0.0	(148.2)	0.1	0.0	(0.1)	8.0	0.0	(8.0)
E3a	Spent Liquor Mix Tanks (Decommissioned)	--	--	--	--	--	--	--	--	--	--	--	--	0.6	0.0	(0.6)	7.2	0.0	(7.2)	--	--	--	--	--	--
E4	Smelt Dissolving Tank *Decommissioned*	204.2	0.0	(204.2)	59.8	0.0	(59.8)	4.1	0.0	(4.1)	10.5	0.0	(10.5)	5.0	0.0	(5.0)	2.8	0.0	(2.8)	--	--	--	--	--	--
E5-1	Lime Slakers (total flow)	0.3	0.4	0.1	--	--	--	--	--	--	--	--	--	190.3	219.3	28.9	0.5	0.6	0.1	--	--	--	--	--	--
E6	Causticizing System	--	--	--	--	--	--	--	--	--	--	--	--	176.4	203.3	26.8	0.5	0.6	0.1	--	--	--	--	--	--

* BA: Baseline Accommodated emissions, PA: Projected Actual emissions, PC: Projected change in emissions

Total Emission Increases and Decreases – Phase IIIA, cont'd.

		PM_{10}			CO			SO_2			NO_x			VOC			TRS			Lead			H_2SO_4		
ID	Emission Unit	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)
E7a	Lime Kiln System (Total)	4.8	8.6	3.8	67.1	151.2	84.2	36.2	60.9	24.7	124.7	299.6	174.9	29.7	40.6	10.9	5.9	10.0	4.1	0.3	0.5	0.2	1.2	1.7	0.4
E8	Tall Oil Plant	--	--	--	--	--	--	--	--	--	--	--	--	370.4	370.4	--	1.6	1.6	--	--	--	--	--	--	--
F1 -fs	Fiber Source Material Storage Piles and Stacking/Reclaiming	1.9	1.9	--	--	--	--	--	--	--	--	--	--	1.4	1.4	--	--	--	--	--	--	--	--	--	--
F1 -hf	Hog Fuel Material Handling	0.1	0.4	0.3	--	--	--	--	--	--	--	--	--	0.3	0.3	--	--	--	--	--	--	--	--	--	--
F13	Petcoke Silo Bin Vent No. 1	0.0	0.5	0.5			--	--	--	--	--	--	--		--	--	--	--	--			--			
F14	Petcoke Silo Bin Vent No. 2	0.0	0.5	0.5	--	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--	--	--
F1-c	Coal Material Storage Piles and Stacking/Reclaiming	0.0	0.5	0.5	--	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--	--	--
F2-lt	Landfill Trucks	0.5	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F2-pt	Plant Trucks	25.9	25.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F3a	Wastewater Treatment System	--	--	--	--	--	--	--	--	--	--	--	--	824.6	1,265.0	440.3	82.7	126.8	44.1	--	--	--	--	--	--
F3b	Wastewater Pipeline	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.0	8.7	0.6	--	--	--	--		
F4	SOG/NCG combustion in the Lime Kiln	0.0	22.0	22.0	0.0	0.9	0.9	--	--	--	0.0	102.8	102.8	--	--	--	0.0	0.1	0.1	--	--	--	0.0	2.1	2.1
F5	Landfill Operations & Unloading Dumps	2.0	2.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F6	Diesel Stormwater Pump	1.5	1.5	--	5.9	5.9	--	0.3	0.3	--	17.1	17.1	--	0.7	0.7	--	--	--	--	--	--	--	--	--	--
F7/F9	Wood Chip Screening and Conditioning Area	3.4	5.2	1.8	--	--	--	--	--	--	--	--	--	12.5	19.1	6.7	--	--	--	--	--	--	--	--	--
FW	Plant-Wide Fugitives	--	--	--	--	--	--	--	--	--	--	--	--	528.9	499.7	--	27.7	23.6	(2.8)	--	--	--	--	--	--
TOTAL PROJECT EMISSION DECREASES		(640.2)			(5,924.2)			(1,729.7)			(3,425.6)			(192.7)			(161.0)			(0.4)			(8.0)		
TOTAL PROJECT EMISSION INCREASES		440.5			3,247.8			1,724.0			3,052.9			1,146.7			98			1.00			56.8		
PSD SIGNIFICANCE THRESHOLD		15.0			100.0			40.0			40.0			40.0			10.0			0.6			7.0		
EXCEEDED THRESHOLD?		YES			YES			YES			YES			YES			YES			YES			YES		
TOTAL CREDITABLE EMISSION CHANGES (tpy)		(199.7)			(2,676.4)			(5.8)			(372.7)			953.9			(62.5)			0.6			48.8		

Total Emission Increases and Decreases – Phase IIIB

		PM_{10}			CO			SO_2			NO_x			VOC			TRS			Lead			H_2SO_4		
ID	**Emission Unit Description**	**BA (tpy)**	**PA (tpy)**	**PC (tpy)**	**BA (tpy)**	**PA (tpy)**	**PC (tpy)**	**BA (tpy)**	**PA (tpy)**	**PC (tpy)**	**BA (tpy)**	**PA (tpy)**	**PC (tpy)**	**BA (tpy)**	**PA (tpy)**	**PC (tpy)**	**BA (tpy)**	**PA (tpy)**	**PC (tpy)**	**BA (tpy)**	**PA (tpy)**	**PC (tpy)**	**BA (tpy)**	**PA (tpy)**	**PC (tpy)**
A4-A6	Total OCC Plants	--	--	--	--	--	--	--	--	--	--	--	--	82.4	99.6	17.2	--	--	--	--	--	--	--	--	--
A8	OCC Lightweight Rejects Baghouse	0.0	1.9	1.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
A8b	New OCC Lightweight Rejects Baghouse for new boiler	1.9	1.9	--	--	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--	--	--	--	--
B1	No. 1 Brownstock Washer	--	--	--	--	--	--	--	--	--	--	--	--	86.6	108.6	22.0	2.7	3.4	0.7	--	--	--	--	--	--
B2	No. 2 Brownstock Washer	--	--	--	--	--	--	--	--	--	--	--	--	46.4	77.6	31.2	1.4	2.4	1.0	--	--	--	--	--	--
B3	No. 3 Brownstock Washer	--	--	--	--	--	--	--	--	--	--	--	--	26.6	58.2	31.5	0.8	1.8	1.0	--	--	--	--	--	--
B4	Total Brownstock Washers			--			--			--			--	159.6	244.4	84.8	5.0	7.6	2.6	--	--	--	--	--	--
C1-C3	No. 1 Paper Machine	12.2	13.1	1.0	--	--	--	--	--	--	--	--	--	1,048.4	1,133.8	85.4	--	--	--	--	--	--	--	--	--
C4-C6	No. 2 Paper Machine	5.7	6.4	0.6	--	--	--	--	--	--	--	--	--	494.7	548.0	53.3	--	--	--	--	--	--	--	--	--
C7-C9	No. 3 Paper Machine	5.5	6.6	1.0	--	--	--	--	--	--	--	--	--	477.7	566.9	89.2	--	--	--	--	--	--	--	--	--
D1	Bark Boiler	306.6	306.6	--	11,399.4	11,399.4	--	254.5	254.5	--	840.1	840.1	--	174.3	174.3	--	--	--	--	0.3	0.3	--	76.1	76.1	--
D2	Power Boiler	658.3	457.7	--	340.9	237.1	--	6,512.2	1,750.0	(36.2)	3,935.8	684.2	(2,514.4)	27.5	19.1	--	--	--	--	0.1	0.1	(0.2)	86.0	59.8	--
D3	Package Boiler	6.5	8.3	1.8	55.9	71.1	15.2	0.4	0.6	0.1	74.6	94.9	20.3	59.1	75.2	16.1	--	--	--	--	--	--	--	--	--
D5-2	BFB Boiler (New)	0.0	210.2	210.2	0.0	1,576.8	1,576.8	0.0	420.5	420.5	0.0	1,314.0	1,314.0	0.0	128.3	128.3	--	--	--	0.0	0.5	0.5	0.0	112.7	112.7
D6	Recovery Furnace (New) firing BLS	0.0	190.1	190.1	0.0	338.7	338.7	0.0	746.1	746.1	0.0	1,078.1	1,078.1	0.0	137.3	137.3	0.0	24.1	24.1	--	--	--	0.0	11.9	11.9
D6g	Recovery Furnace (New) firing nat gas	--	--	--	0.0	144.3	144.3	--	--	--	0.0	383.8	383.8	0.0	11.5	11.5	--	--	--	--	--	--	--	--	--
E2a	Evaporator Sump	--	--	--	--	--	--	--	--	--	--	--	--	138.9	213.0	74.2	42.4	65.1	22.6	--	--	--	--	--	--
E3	Recovery Furnace (Old) *Decommissioned*	242.0	0.0	(242.0)	1,640.5	0.0	(1,640.5)	1,116.0	0.0	(1,116.0)	624.8	0.0	(624.8)	51.9	0.0	(51.9)	148.2	0.0	(148.2)	0.1	0.0	(0.1)	8.0	0.0	(8.0)
E3a	Spent Liquor Mix Tanks (Decommissioned)	--	--	--	--	--	--	--	--	--	--	--	--	0.6	0.0	(0.6)	7.2	0.0	(7.2)	--	--	--	--	--	--
E4	Smelt Dissolving Tank *Decommissioned*	204.2	0.0	(204.2)	59.8	0.0	(59.8)	4.1	0.0	(4.1)	10.5	0.0	(10.5)	5.0	0.0	(5.0)	2.8	0.0	(2.8)	--	--	--	--	--	--
E5-1	Lime Slakers (total flow)	0.3	0.4	0.1	--	--	--	--	--	--	--	--	--	190.3	219.3	28.9	0.5	0.6	0.1	--	--	--	--	--	--
E6	Causticizing System	--	--	--	--	--	--	--	--	--	--	--	--	176.4	203.3	26.8	0.5	0.6	0.1	--	--	--	--	--	--

* BA: Baseline Accommodated emissions, PA: Projected Actual emissions, PC: Projected change in emissions

Total Emission Increases and Decreases – Phase IIIB, cont'd.

		PM_{10}			CO			SO_2			NO_x			VOC			TRS			Lead			H_2SO_4		
ID	Emission Unit Description	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)	BA (tpy)	PA (tpy)	PC (tpy)
E7a	Lime Kiln System (Total)	4.8	8.6	3.3	62.9	151.2	88.4	36.2	60.9	24.7	124.7	299.6	174.9	29.7	40.6	10.9	5.9	10.0	4.1	0.3	0.5	0.2	1.2	1.7	0.4
E8	Tall Oil Plant	--	--	--	--	--	--	--	--	--	--	--	--	370.4	370.4	--	1.6	1.6	--	--	--	--	--	--	--
F1 -fs	Fiber Source Material Storage Piles and Stacking/Reclaiming	1.9	1.9	--	--	--	--	--	--	--	--	--	--	1.4	1.4	--	--	--	--	--	--	--	--	--	--
F1 -hf	Hog Fuel Material Handling	0.1	0.4	0.3	-	--	--	--	--	--	--	--	--	0.3	0.3	--	--	--	--	--	--	--	--	--	--
F13	Petcoke Silo Bin Vent No. 1	0.0	0.5	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F14	Petcoke Silo Bin Vent No. 2	0.0	0.5	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F1-c	Coal Material Storage Piles and Stacking/Reclaiming	0.0	0.5	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F2-lt	Landfill Trucks	0.5	0.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F2-pt	Plant Trucks	25.9	25.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F3a	Wastewater Treatment System	--	--	--	--	--	--	--	--	--	--	--	--	824.6	1,265.0	440.3	82.7	126.8	44.1	--	--	--	--	--	--
F3b	Wastewater Pipeline	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.0	8.7	0.6	--	--	--	--	--	--
F4	SOG/NCG combustion in the Lime Kiln	0.0	22.0	22.0	0.0	0.9	0.9	--	--	--	0.0	102.8	102.8	--	--	--	0.0	0.1	0.1	--	--	--	0.0	2.1	2.1
F5	Landfill Operations & Unloading Dumps	2.0	2.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F6	Diesel Stormwater Pump	1.5	1.5	--	5.9	5.9	--	0.3	0.3	--	17.1	17.1	--	0.7	0.7	--	--	--	--	--	--	--	--	--	--
F7/F9	Wood Chip Screening and Conditioning Area	3.4	5.2	1.8	--	--	--	--	--	--	--	--	--	12.5	19.1	6.7	--	--	--	--	--	--	--	--	--
FW	Plant-Wide Fugitives	--	--	--	--	--	--	--	--	--	--	--	--	528.9	610.9	82.1	27.7	23.6	(2.8)	--	--	--	--	--	--
TOTAL PROJECT EMISSION DECREASES (tpy)		(446.0)			(1,700.0)			(1,156.0)			(3,150.0)			(64.4)			(161.0)			(0.3)			(8)		
TOTAL PROJECT EMISSION INCREASES (tpy)		436.0			2,164			1,191			3,074			1,293.0			98.0			0.7			127		
PSD SIGNIFICANCE THRESHOLD		15.0			100.0			40.0			40.0			40.0			10.0			0.6			7.0		
EXCEEDED THRESHOLD?		YES			YES			YES			YES			YES			YES			YES			YES		
TOTAL CREDITABLE EMISSION CHANGES (tpy)		(10.0)			464.0			35.1			(75.9)			1,228.6			(62.5)			0.5			119.1		

* BA: Baseline Accommodated emissions, PA: Projected Actual emissions, PC: Projected change in emissions

Emissions Increases from the Proposed Project (Phase I)

	PM	PM_{10}	CO	SO_2	NO_x	VOC	TRS	Pb	SAM
	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY
Project Increase	166.53	165.33	281.7	631.66	931.30	1,026.23	91.19	0.04	10.12
PSD SER	25	15	100	40	40	40	10	0.6	7
Greater than SER?	YES	YES	YES	YES	YES	YES	YES	NO	YES

The emissions increases from the proposed projects in Phase I exceed the respective PSD SER for the following pollutants: PM, PM_{10}, CO, SO_2, NO_x, VOC, TRS and SAM. Therefore, a PSD netting analysis is conducted for each of these pollutants.

Emissions Increases from the Proposed Project (Phase II)

	PM	PM_{10}	CO	SO_2	NO_x	VOC	TRS	Pb	SAM
	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY
Project Increase	234.10	230.59	611.06	770.96	1,789.90	1,088.06	98.46	0.20	15.36
PSD SER	25	15	100	40	40	40	10	0.6	7
Greater than SER?	YES	YES	YES	YES	YES	YES	YES	NO	YES

The emissions increases from the proposed projects in Phase II exceed the respective PSD SER for the following pollutants: PM, PM_{10}, CO, SO_2, NO_x, VOC, TRS and SAM. Therefore, a PSD netting analysis is conducted for each of these pollutants.

Emissions Increases from the Proposed Project (Phase IIIA)

	PM	PM_{10}	CO	SO_2	NO_x	VOC	TRS	Pb	SAM
	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY
Project Increase	442.6	440.5	3,247.8	1724.0	3052.9	1,146.7	98.5	1.0	56.8
PSD SER	25	15	100	40	40	40	10	0.6	7
Greater than SER?	YES	YES	YES	YES	YES	YES	YES	YES	YES

The emissions increases from the proposed projects in Phase IIIA exceed the respective PSD SER for all the pollutants. Therefore, a PSD netting analysis is conducted for each of these pollutants.

Emissions Increases from the Proposed Project (Phase IIIB)

	PM	PM_{10}	CO	SO_2	NO_x	VOC	TRS	Pb	SAM
	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY
Project Increase	438	436	2,164	1,191	3,074	1,293.0	98	0.7	127
PSD SER	25	15	100	40	40	40	10	0.6	7
Greater than SER?	YES	YES	YES	YES	YES	YES	YES	YES	YES

The emissions increases from the proposed projects in Phase IIIB exceed the respective PSD SER for all the pollutants. Therefore, a PSD netting analysis is conducted for each of these pollutants.

Project Contemporaneous Period

Weyerhaeuser has interpreted the contemporaneous period to be three years prior to start of construction through the start of operation of the final element of Phase III. Weyerhaeuser initiated construction of the CRF project in February of 2005 and is estimated to begin construction of the proposed final phase of modifications in October of 2012. Therefore, the contemporaneous period for the proposed modification is approximately February 2002 to October 2014. Weyerhaeuser will update the DEQ per OAC 100-8-1-4 should this schedule change.

Creditable Emissions Increases and Decreases

During the contemporaneous period defined above, the following three projects with creditable emission increases were conducted at the Valliant Mill:

- The installation of a wastewater pipeline and associated equipment under Permit No. 97-057-C.
- The installation of a wood chipping operation under Permit No. 97-057-C (M-2).
- The installation of coal handling equipment, as discussed in an applicability determination letter submitted to the DEQ on March 25, 2004.

During the (M-4) permit evaluation, a fourth project was listed in the contemporaneous period:

- A lime kiln burner modification project, as submitted in a Tier I Construction Permit application on April 15, 2004.

In this permit modification, the lime kiln burner project is included in the Phase I emissions because retrospectively, it is known that emissions changes from this project did not occur until 2005.

Weyerhaeuser has included creditable, contemporaneous emission increases and decreases in the netting analysis. The creditable, contemporaneous emission increases and decreases are the changes in actual emissions that will occur as a result of physical changes that Weyerhaeuser has already made, or will make, during the contemporaneous period. The construction at the Mill has and will occur in three distinct phases:

▲ Phase I – Construct New Recovery Furnace project (complete); limit combined total emissions of NO_X on the recovery furnace and power boiler. Meeting net emissions still allows for enhancements to existing areas including but not limited to: causticizing area such as green and white liquor filtering and mud filtering; brownstock washing area and/or additional 4th BSW line, enhanced evaporation such as rebuilding evaporators or crystalizers; adding a third ADS in the chipyard, enhancement to the digester systems, and continued enhancements to the paper machines and OCC areas;

▲ Phase II – Projects outlined in Phase I and: Pollution control on the Power Boiler, Causticizing area, Evaporator area, and Lime Kiln including a new burner installation, increase in pet coke burning, SOGs/NCGs full time combustion; and possibly lifting the natural gas limits on the new recovery furnace; and any enhancements not completed in Phase I; and

▲ Phase IIIa – Projects outlined in Phases I and II as well as: construct a CFB as originally depicted in (M-4); new lime kiln with additional pet coke burning and handling; and enhancements not completed in Phases I and II; or

▲ Phase IIIb – Projects outlined in Phases I and II as well as: construct a BFB Boiler and/or modify the existing steam generation units, new lime kiln with additional pet coke burning and handling; and enhancements not completed in Phases I and II.

The netting analysis for each phase of construction includes the creditable emissions increases and decreases from each previous phase, which ensures netting integrity over the life of the entire construction project. Therefore, Phase III represents all the emissions changes associated with this permit modification. The tables below summarize emission increases and decreases from each of the proposed construction phases.

Project Net Emissions Change

In order to determine the total creditable emissions change, the project emissions increases are summed with the contemporaneous increases and decreases. Emission rates previously relied upon in the issuance of a PSD permit is excluded from this calculation, since they are not considered creditable changes.

Net Emissions Change from the Proposed Project (Phase I)

	PM	PM_{10}	CO	SO_2	NO_x	VOC	TRS	Pb	SAM
	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY
Emissions Increase	166.53	165.33	281.66	631.66	931.30	1,026.23	91.19	0.04	10.12
Emissions Decrease	-468.17	-468.17	-1701.13	-1,120.20	-896.49	-57.5	-161.71	-0.25	-10.09
Contemporaneous Emissions	4.99	13.26	0.00	0.00	0.00	0.00	8.10	0.00	0.00
Net Emissions Change	-296.65	-289.58	-1,419.47	-488.54	34.81	968.70	-62.42	NA	0.04
PSD SER	25	15	100	40	40	40	10	0.6	7
Greater than SER?	NO	NO	NO	NO	NO	YES	NO	NA	NO

The net emissions changes from the Phase I proposed projects exceed the respective PSD SER for VOC. Therefore, a PSD review for each of this pollutant is presented. As the net emissions change for PM, PM_{10}, CO, SO_2, NO_x, and TRS do not exceed their respective PSD SERs, no further PSD review for these pollutants is required for this phase.

Net Emissions Change from the Proposed Project (Phase II)

	PM	PM_{10}	CO	SO_2	NO_x	VOC	TRS	Pb	SAM
	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY
Emissions Increase	234.10	230.59	611.06	770.96	1,789.90	1,088.06	98.46	0.2	15.36
Emissions Decrease	-446.14	-446.14	-1700.2	-1120.2	-1843.6	-58.29	-160.86	-0.2	-8.0
Contemporaneous Emissions	4.99	13.26	0.00	0.00	0.00	0.00	8.10	0.00	0.00
Net Emissions Change	-207.07	-202.29	1,089.19	-349.20	-53.70	1,029.77	-54.30	NA	7.36
PSD SER	25	15	100	40	40	40	10	0.6	7
Greater than SER?	NO	NO	NO	NO	NO	YES	NO	NA	YES

The net emissions changes from the Phase II proposed projects exceed the respective PSD SER for VOC and SAM. Therefore, a PSD review for each of these pollutants is presented. As the net emissions change for PM, PM_{10}, CO, SO_2, NO_x, and TRS do not exceed their respective PSD SERs, no further PSD review for these pollutants is required for Phase II.

Net Emissions Change from the Proposed Project (Phase IIIA)

	PM	PM_{10}	CO	SO_2	NO_x	VOC	TRS	Pb	SAM
	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY
Emissions Increase	442.6	440.5	3,247.8	1,724.0	3,052.9	1,146.7	98.5	1.0	56.8
Emissions Decrease	-640.2	-640.2	-5,924.2	-1729.7	-3,425.6	-192.7	-161.0	-0.4	-8.0
Contemporaneous Emissions	4.99	13.26	0.00	0.00	0.00	0.00	8.10	0.00	0.00
Net Emissions Change	-192.7	-186.5	-2,676.4	-5.8	-372.7	953.9	-54.3	0.56	48.8
PSD SER	25	15	100	40	40	40	10	0.6	7
Greater than SER?	NO	NO	NO	NO	NO	YES	NO	NO	YES

The net emissions changes from the proposed Phase IIIA projects exceed the respective PSD SER for VOC and SAM. Therefore, a PSD review for each of these pollutants is presented. As the net emissions change for PM, PM_{10}, CO, SO_2, NO_x, TRS and Pb do not exceed their respective PSD SERs, no further PSD review for these pollutants is required for Phase IIIA.

Net Emissions Change from the Proposed Project (Phase IIIB)

	PM	PM_{10}	CO	SO_2	NO_x	VOC	TRS	Pb	SAM
	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY
Emissions Increase	438	436	2,164	1,191	3,074	1,293.0	98	0.7	127
Emissions Decrease	-446.1	-446.1	-1700.2	-1156.4	-3149.7	-64.4	-161	-0.3	-8.0
Contemporaneous Emissions	4.99	13.26	0.00	0.00	0.00	0.00	8.10	0.00	0.00
Net Emissions Change	-3.01	3.26	464.0	35.1	-75.9	1,228.6	-54.4	0.49	119.1
PSD SER	25	15	100	40	40	40	10	0.6	7
Greater than SER?	NO	NO	YES	NO	NO	YES	NO	NO	YES

The net emissions changes from the proposed Phase IIIB projects exceed the respective PSD SER for CO, VOC and SAM. Therefore, a PSD review for each of these pollutants is presented. As the net emissions change for PM, PM_{10}, CO, SO_2, NO_x, , TRS and Pb, do not exceed their respective PSD SERs, no further PSD review for these pollutants is required for Phase IIIB.

SECTION VII. BEST AVAILABLE CONTROL TECHNOLOGY

Any major stationary source or major modification subject to federal PSD review must conduct an analysis to ensure the implementation of BACT. The requirement to conduct a BACT analysis can be found in the Clean Air Act itself, in the federal regulations implementing the PSD program, in the regulations governing federal approval of state PSD programs, and in Oklahoma regulations. The State of Oklahoma defines BACT in OAC 252:100-8-1.1, as follows:

"...the control technology to be applied for a major source or modification is the best that is available as determined by the Director on a case-by-case basis taking into account energy, environmental, and economic impacts and other costs of alternate control systems."

Although BACT is determined by evaluating control technologies to determine which are technically and economically feasible, BACT is an emission limit, not the use of a specific technology. A BACT analysis is required to assess the appropriate level of control for each new or physically modified emissions unit for each pollutant that exceeds an applicable PSD SER. As discussed in Section VI , the proposed project requires a BACT analysis for CO, VOC and SAM.

BACT APPLICABILITY BY POLLUTANT AND EMISSIONS UNIT

Unit Description	CO[1]	VOC	SAM[2]
CFB/BFB Boiler	Yes	Yes	Yes
Lime Kiln	Yes	Yes	Yes
Chemical Recovery Furnace	Yes	Yes	Yes
Paper Machine	Yes	Yes	No
OCC Plants	Yes	Yes	No

[1] CO was only triggered for BACT analysis in the Ph IIIB option.

[2] SAM was triggered for BACT analysis in the Ph II, Ph IIIA and Ph IIIB options.

In a memorandum dated December 1, 1987, U.S. EPA stated its preference for a "top-down" analysis (U.S. EPA, Office of Air and Radiation, Memorandum from J.C. Potter to the Regional Administrators. Washington, D.C. December 1, 1987). After determining whether any NSPS is applicable, the first step in this approach is to determine for the emissions unit in question, the most stringent control available for a similar or identical source or source category. If it can be shown that this level of control is technically or economically infeasible for the unit in question, the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic concerns. The five basic steps of a top-down BACT review procedure as identified by U.S. EPA in the March 15, 1990, Draft BACT Guidelines are as follows (U.S. EPA, Draft BACT Guidelines. (Research Triangle Park, NC). March 15, 1990):

Step 1. Identify all control technologies
Step 2. Eliminate technically infeasible options
Step 3. Rank remaining control technologies by control effectiveness
Step 4. Evaluate most effective controls and document results
Step 5. Select BACT

U.S. EPA has consistently interpreted statutory and regulatory BACT definitions as containing two core requirements that the agency believes must be met by any BACT determination, regardless of whether it is conducted in a "top-down" manner. First, the BACT analysis must include consideration of the most stringent available control technologies (i.e., those which provide the "maximum degree of emissions reduction"). Second, any decision to require a lesser degree of emissions reduction must be justified by an objective analysis of "energy, environmental, and economic impacts (U.S. EPA, Office of Air and Radiation, Memorandum from J.C. Potter to the Regional Administrators. Washington, D.C. December 1, 1987).

Potentially applicable emission control technologies were identified by researching the U.S. EPA control technology database, technical literature, and control equipment vendor information and by using process knowledge and engineering experience. The Reasonably Available Control Technology (RACT)/BACT/Lowest Achievable Emission Rate (LAER) Clearinghouse (RBLC), a database made available to the public through the U.S. EPA's Office of Air Quality Planning and Standards (OAQPS) Technology Transfer Network (TTN), lists technologies that have been approved in PSD permits as BACT for numerous types of process units.

CFB/BFB Boiler BACT Analysis

SUMMARY OF ANTICIPATED MAJOR CFB/BFB BOILER DESIGN PARAMETERS

Parameter	**Value**	**Notes**
Heat Input	(TSI)	
Steam Output	(TSI)	2,350 psig, 1,000°F superheat
Worst-Case Fuel	Coal	Also will burn a variety of other fuels
Coal Sulfur Content	0.3% to 4%	Typically 2% to 3%

It is anticipated that the CFB Boiler will burn multiple fuels and at times up to 100% coal. It is anticipated that the BFB Boiler will burn multiple fuels, mainly wood residuals and some coal, possibly up to 30%.

Pollutant Formation Processes

CO emissions result from incomplete combustion, resulting from insufficient residence time at a sufficiently high temperature to complete the final step in the oxidation of fuel. The oxidation of CO to CO_2 is a slow reaction compared to most hydrocarbon oxidation reactions. Overall, CO formation is minimized at slightly lean air/fuel mixtures, but increases as combustion temperature decreases, making optimization of combustion parameters to minimize both CO and NO_x, a technical challenge.

SAM is formed in the boiler's combustion chamber by the oxidation of SO_2 to SO_3 and its subsequent reaction with water. In the boiler stack, all of the SO_3 formed is expected to convert to sulfuric acid mist.

Emissions of VOC result from incomplete combustion of fuel from either insufficient residence time at a sufficiently high temperature or insufficient oxygen levels to complete the final step in the oxidation of fuel. Good combustion practices that control CO also minimize emissions of VOC.

CFB/BFB Boiler Control Technology Evaluations

The table below shows the control technologies identified as being commercially available for control of the listed pollutants from a CFB/BFB Boiler. The potential control technologies listed were evaluated for each pollutant, based on energy, environmental, and/or economic considerations. Consistent with U.S. EPA's top-down approach, the control technologies for each pollutant were considered in order of decreasing emissions reduction potential.

POTENTIAL CONTROL TECHNOLOGIES FOR THE CFB/BFB BOILER

Pollutant	Listed Control Technologies	Potential Add-on Control Efficiency (%)*
CO	Catalytic Oxidation	60-80
	CFB/BFB Boiler	0.3 lb/MMBTU
	GCP	Base Case
SAM	Dry Scrubbing in CFB/BFB Bed	90-95
	Wet Scrubber	80-95
	Spray Dryer Absorber	60-90
	Low Sulfur Coal	Base Case
VOC	Catalytic Oxidation	60-80
	GCP in a CFB/BFB Boiler	Base Case

*Control efficiencies obtained from AP-42 (9/98), Section 1.1, Tables 1.1-1 and 1.1-2, NCASI Special Report 03-04, and vendor data.

Carbon Monoxide

The CFB Boiler project (Phase IIIA) does not trigger CO. For CO emissions, there are a limited number of control technologies available, since CO is the product of incomplete combustion. CO emissions are minimized by slightly lean air/fuel mixtures and increase rapidly with decreasing combustion temperature. Catalytic oxidation has the highest control efficiency for CO and is considered first.

Catalytic Oxidation

Catalytic oxidation involves passing the exhaust gas through a catalyst bed, which oxidizes CO to carbon dioxide (CO_2) by the following overall reaction:

$CO + \frac{1}{2}O_2 \rightarrow CO_2$

This reaction is promoted by several noble metal-enriched catalysts at high temperatures. Under ideal operating conditions, this technology can achieve an 80% reduction in CO emissions. Prior to entering the catalyst bed where the oxidation reaction occurs, the exhaust gas must be pre-heated to approximately 400 to 800 °F. Below this temperature range, the reaction rate drops sharply, and effective oxidation of CO is no longer feasible.

Sulfur and other compounds in the exhaust may foul the catalyst, leading to decreased activity. Catalyst fouling occurs slowly under normal operating conditions and may be accelerated by even moderate sulfur concentrations in the exhaust gas. The catalyst can be chemically washed to restore its effectiveness, but eventually, irreversible degradation occurs. Catalyst replacement is usually necessary every five to ten years, depending on type and operating conditions.

Circulating Fluidized Bed/Bubbling Fluidized Bed Boiler
The design of the CFB/BFB boiler produces less CO than conventional boiler designs. The furnace section of the CFB/BFB keeps the combustion products at temperatures of greater than 1,550 °F for more than 0.5 seconds (i.e., residence time of > 0.5 s). This temperature is sufficient to oxidize CO, and sufficient excess oxygen in the furnace section is maintained by the overfire air and the stack residual oxygen monitor. Data from multiple CFB/BFB boiler vendors indicate that these units are able to achieve CO emission levels of 0.3 lb/MMBTU without additional controls.

Good Combustion Practices
Good combustion practices involve parametric monitoring and controlling the operating parameters of the boiler to ensure continual operation as close to optimum conditions as possible. CO emissions are minimized when the boiler temperature and excess oxygen availability are adequate for complete combustion.

CO BACT Determination
Catalytic oxidation has been implemented successfully in combined cycle power plants that utilize natural gas or other low sulfur fuels. This technology, however, is not technically feasible for use with coal-fired boilers because the catalyst consists of several precious metals that are easily contaminated by sulfur dioxide contained in the flue gas.

In addition, an RBLC search and survey of catalyst suppliers revealed no installations of a CO catalyst on a coal-fired unit. As catalytic oxidation is not technically feasible, this option was eliminated from consideration as BACT.

As a result, the applicant proposes the use of a CFB/BFB boiler as BACT for CO. This level of control corresponds to a CO emission limit of 0.30 lb/MMBTU averaged on a Weyerhaeuser fiscal month basis.

Sulfuric Acid Mist

SAM is formed by the hydration of SO_2 in free (i.e., liquid phase) water. Therefore, in order to control emissions of SAM, emissions of SO_2 must be controlled. The remainder of this analysis focuses on controlling emissions of SO_2.

Because of the acidic nature of SO_2, existing sulfur dioxide control technology is primarily based on alkaline scrubbing systems. Scrubbers remove SO_2 formed during combustion by using various alkaline agents to absorb SO_2 in the flue gas. Flue gases can be treated using wet, dry, or semi-dry desulfurization agents that are either disposable (byproducts are discarded or sold) or regenerable (absorbent is regenerated and reused).

Dry Scrubbing in CFB/BFB Boiler Bed
CFB/BFB boilers frequently use a dry scrubbing technique by adding finely ground limestone to the fluidized bed. The mechanism for this is nearly identical to a spray dryer. In the CFB Boiler, limestone is calcined into lime (CaO) by driving off CO_2. The lime then reacts with SO_2 to form

calcium sulfate, a solid ($CaSO_4$). The calcium sulfate particles are removed from the boiler media recirculation system by the particulate control system. The CFB/BFB Boiler dry scrubbing mechanism results in SO_2 reductions of approximately 90 to 95% (F. Belin *et. al*, "Babcock & Wilcox CFB Boilers—Design and Experience", Presented to the 16th International Conference on FBC, May 2001, Reno, NV). Removal efficiencies of up to 98% are possible under certain conditions, but are not achievable with all coals.

Wet Scrubber

Lime/limestone, sodium hydroxide, and dual alkali scrubbers are among the commercially proven wet flue gas desulfurization (WFGD or "wet scrubber") technologies. The lime/limestone processes uses a slurry of calcium oxide or limestone to absorb SO_2 from the flue gas. Sodium hydroxide systems use a caustic solution, while dual alkali systems use a combination of limestone and caustic solution. Control efficiencies up to 95% can be sustained over extended periods. However, the efficiency of the wet scrubber will be dependent on many factors, including the SO_2 inlet concentration; lower inlet concentrations yield lower control efficiencies. In the case of the CFB/BFB Boiler, a wet scrubber is expected to offer approximately 50% control because of the low SO_2 inlet concentrations (because of the inherent SO_2 control in the CFB/BFB Boiler).

A simplistic economic analysis was performed to determine the cost effectiveness of a wet scrubber on the CFB/BFB Boiler. Cost information was obtained from recent U.S. EPA fact sheets used to calculate costs for controlling SO_2 (U.S. EPA, "Air Pollution Control Technology Fact Sheet; Flue Gas Desulfurization", EPA-452/F-03-034, p. 2). The SO_2 control efficiencies were assumed to be the same as SAM efficiencies and were applied to the uncontrolled SAM emission rates. Since the U.S. EPA data give a range of costs, low, medium, and high cost values were chosen. This information is shown in table on the following page. As the table shows, the use of a wet scrubber is not economically feasible, even when burning higher (up to 4%) sulfur coal.

U.S. EPA COST DATA FOR WET SCRUBBERS ON SMALL BOILERS (<2,000 MMBTU/HR)

	Cost Range		
Parameter	**Low**	**Medium**	**High**
Capital Cost, $/MMBtu	$25,000	$75,000	$150,000
O&M Cost, $/MMBtu-yr	$800	$1,200	$1,800
Annualized Capital Cost, $/yr	$7,095,000	$21,285,000	$42,570,000
O&M Cost, $/yr	$1,513,600	$2,270,400	$3,405,600
Total Annual Cost, $/yr	$8,608,600	$23,555,400	$45,975,600
Cost Effectiveness, $/ton SAM, 4% Sulfur Coal	$989,346	$2,707,110	$5,283,757

Spray Dryer Absorber

A spray dryer absorber system utilizes alkaline agent slurry in conjunction with a particulate collection system, such as a baghouse, fabric filter, or ESP. Similar to a WFGD system, the flue gas stream is contacted with an alkaline slurry spray after leaving the boiler combustion chamber.

Unlike a WFGD, which relies on flue gas contact with the slurry as the primary method of pollutant removal, this stage represents the first of two removal steps for a spray dryer absorber. Once the slurry spray is introduced into the flue gas stream, the alkali droplets are allowed to react with the SO_2 contaminants before drying into a fine powder. This fine powder is then carried over into the particulate collection system and removed. This collector serves as the second stage of the removal system and provides additional contact between the dried reactants and SO_2 contaminants.

The combination of spray system and particulate removal is able to achieve SO_2 removal efficiencies of 60 to 90% when implemented aggressively. However, the efficiency of the spray dryer system will be dependent on many factors, including the SO_2 inlet concentration; lower inlet concentrations yield lower control efficiencies. In the case of the CFB/BFB Boiler, a spray dryer is expected to offer approximately 50% control (the 50% control was provided by CFB/BFB boiler vendor) because of the low SO_2 inlet concentrations (because of the inherent SO_2 control in the CFB/BFB Boiler).

A simplistic economic analysis was performed to determine the cost effectiveness of a spray dryer absorber on the CFB Boiler. Cost information was obtained from recent U.S. EPA data used to calculate costs for controlling SO_2 (U.S. EPA, “Air Pollution Control Technology Fact Sheet; Flue Gas Desulfurization”, EPA-452/F-03-034, p. 2). The SO_2 control efficiencies were assumed to be the same as SAM efficiencies and were applied to the uncontrolled SAM emission rates. Since the U.S. EPA data give a range of costs, low, medium, and high cost values were chosen. This information is shown following page. As the table shows, the use of a spray dryer is not economically feasible, even when burning higher (up to 4%) sulfur coal.

U.S. EPA COST DATA FOR SPRAY DRYERS ON SMALL BOILERS (<2,000 MMBTU/HR)

	Cost Range		
Parameter	**Low**	**Medium**	**High**
Capital Cost, $/MMBtu	$30,000	$75,000	$150,000
O&M Cost, $/MMBtu-yr	$1,000	$5,000	$30,000
Annualized Capital Cost, $/yr	$4,257,000	$7,095,000	$11,352,000
O&M Cost, $/yr	$1,892,000	$2,838,000	$5,676,000
Total Annual Cost, $/yr	$6,149,000	$9,933,000	$17,028,000
Cost Effectiveness, $/ton SAM, 4% Sulfur Coal	$706,675	$1,141,553	$1,956,947

Low Sulfur Coal Usage

Sulfur dioxide emissions are directly related to the sulfur content of the coal fuel fired in the boiler. As a result, the use of lower sulfur coal can have a dramatic effect on SO_2 emissions. A survey of commercially-available coal types indicates a variation of sulfur content from 0.25 weight percent (wt %) for some anthracite coals to as high as 5.4 wt% for certain bituminous varieties.

While the use of low-sulfur coal is attractive from the perspective of minimizing emissions, Weyerhaeuser anticipates using coal mined in Oklahoma for a portion of the coal fired in the

CFB/BFB Boiler. Low-sulfur coal is not available from mines in Oklahoma and surrounding states and must be imported from Wyoming or its neighboring states, resulting in additional cost and transportation-related emissions.

SAM BACT Determination
As mentioned above, the operation of a CFB/BFB boiler results in inherently low SO_2 and SAM emissions. The economic analyses for a wet scrubber and a spray dryer presented above indicate that the additional installation of these devices is not economical. Therefore, the use of a CFB/BFB boiler is determined as BACT for SAM. An appropriate BACT limit for SAM is for the BFB Boiler is 0.0214 lb/MMBtu averaged on a Weyerhaeuser fiscal month basis, which is consistent with recent BACT analyses listed in the RBLC database. An appropriate BACT limit for SAM for the CFB boiler is 0.006 lb/MMBtu.

<u>Volatile Organic Compounds</u>

The control technologies reviewed for VOC emissions were catalytic oxidation and good combustion practices.

Catalytic Oxidation
The mechanism of catalytic oxidation is where combustion products are passed over a catalyst at temperatures between 400 and 800°F. However, oxidation catalysts are readily poisoned by even moderate concentrations of SO_2, such as those in the boiler. Therefore, the use of an oxidation catalyst on a CFB boiler is not feasible. In addition, no entries of a CFB/BFB boiler using catalytic oxidation were found in the RBLC database.

Good Combustion Practices
Good combustion practices involve parametric monitoring and controlling the operating parameters of the boiler to ensure continual operation as close to optimum conditions as possible. VOC emissions are minimized when the boiler temperature and excess oxygen availability are adequate for complete combustion. This is ensured by the use of stack oxygen sensors, the long residence time of the combustion products in the boiler and routine tuning of the burners.

VOC BACT Determination
The use of catalytic oxidation on a CFB/BFB boiler is not technically feasible. Therefore, the best feasible control option for VOC from the boiler is the use of GCP. An appropriate BACT limit for VOC (as propane) from the BFB boiler is 0.02 lb/MMBtu averaged on a Weyerhaeuser fiscal month basis. An appropriate BACT limit for VOC (as propane) from the CFB boiler is 0.006 lb/MMBtu, which is consistent with data from multiple CFB boiler vendors.

BACT SUMMARY FOR THE CFB/BFB BOILER

Pollutant	**Emission Limit**	**Control Technology**
CO (BFB boiler only)	0.3 lb/MMBTU (Weyerhaeuser fiscal month average)	CFB/BFB Boiler
SAM	0.0214 lb/MMBtu (BFB) (Weyco fiscal mth) / 0.006 lb/MMBTU (short term) 0.005 lb/MMBtu (CFB) (Weyerhaeuser fiscal month average)	Limestone Injection Design
VOC (as propane)	0.02 lb/MMBtu (BFB) / 0.006 lb/MMBtu (CFB) (Weyerhaeuser fiscal month average)	GCP

<u>Lime Kiln BACT Analysis</u>

SUMMARY OF ANTICIPATED MAJOR LIME KILN DESIGN PARAMETERS

Parameter	**Value**
Heat Input	(TSI)
Primary Fuel	Petcoke (up to 85%) /Natural Gas
Average Petcoke Sulfur Content	5%

Lime Kiln Control Technology Evaluations

The Lime Kiln, either modified or new, will burn a mixture of natural gas and petcoke with up to 85% heat input on pet coke. The potential control technologies listed in table below were evaluated for each pollutant, based on energy, environmental, and/or economic considerations. Consistent with U.S. EPA's top-down approach, the control technologies for each pollutant are considered in order of decreasing emission reduction potential.

POTENTIAL CONTROL TECHNOLOGIES FOR THE MODIFIED /NEW LIME KILN

Pollutant	**Listed Control Technologies**	**Potential Add-on Control Efficiency (%)***
CO	Catalytic Oxidation	60-80%
	GCP	Base Case
SAM	Lime Kiln Scrubbing	75-98
	Wet Scrubber	80-95
	Spray Dryer Absorber	60-90
	Low Sulfur Fuel	Base Case
VOC	Catalytic Oxidation	60-80
	GCP	Base Case

*Control efficiencies obtained from AP-42 (9/98), Section 1.1, Tables 1.1-1 and 1.1-2.

<u>Carbon Monoxide</u>

Catalytic Oxidation

Catalytic oxidation was discussed previously. As with the CFB/BFB boiler, SO_2 in the lime kiln combustion gases will poison the catalytic oxidation catalyst, resulting in reduced efficiency and catalyst life.

In addition, catalytic oxidation has not been successfully demonstrated in practice on a lime kiln. The use of catalytic oxidation on the lime kiln is not technically feasible. Catalytic oxidation will not be considered for the remainder of this analysis.

Good Combustion Practices
Good combustion practices involve monitoring and controlling the operating parameters of the kiln to ensure continual operation as close to optimum conditions as possible. CO emissions are minimized when the boiler temperature and excess oxygen availability are adequate for complete combustion.

CO BACT Determination
The use of GCP is the only technology that is technically feasible for control of CO on the lime kiln. As a result, we propose the use of GCP as BACT for CO. This level of control corresponds to a long-term emission limit of **0.2 lb/MMBTU** on a Weyerhaeuser fiscal month basis, which is consistent with recent BACT determinations in the RBLC database.

<u>Sulfuric Acid Mist</u>

The formation of SAM in the Lime Kiln is the same as in other combustion devices; SO_2 is oxidized to SO_3 and hydrated to form H_2SO_4. The removal mechanisms for SAM are the same as for SO_2, with each control technology providing similar efficiencies for both SO_2 and SAM. Therefore, the remainder of this analysis is focused on SO_2 control technologies.

Lime Kiln Scrubbing
The ability of lime and/or limestone to scrub SO_2 from the exhaust gas. Since the Lime Kiln contains a large quantity of lime, significant amounts of SO_2 are scrubbed from the exhaust stream. The effectiveness of the SO_2 removal is estimated at up to 98% (NCASI, "Technical Bulletin 646, Emission Factors for NO_x, SO_2 and VOC from Boilers, Kraft Pulp Mills and Bleach Plants", 1993 and private communications with Robert Crawford, NCASI, containing draft updates to emissions data in NCASI Technical Bulletin 646).

Wet Scrubber
Wet scrubbing was discussed previously. Control efficiencies up to 95% can be sustained over extended periods.

Spray Dryer Absorber
Spray drying was discussed previously. The combination of a spray system and particulate removal is able to achieve SO_2 removal efficiencies of 60 to 90% when implemented aggressively.

Low Sulfur Fuel Usage
In boilers and other units that do not contain lime as part of the process, sulfur dioxide emissions are directly related to the sulfur content of the fuel fired. As a result, the use of lower sulfur fuel can have a dramatic effect on SO_2 emissions. However, the presence of lime in the Lime Kiln means that SO_2 emissions are relatively insensitive to fuel sulfur content. Therefore, the use of low sulfur fuel is likely to have minimal effect on SO_2 emissions.

SAM BACT Determination
As mentioned above, a lime kiln inherently incorporates aspects of the wet scrubbing and spray dryer systems in its operation. As a result, the inherent scrubbing present in the Lime Kiln is determined as BACT for SAM. This is equivalent to 0.002 lb/MMBtu for SAM averaged on a Weyerhaeuser fiscal month basis.

Volatile Organic Compounds

The control technologies reviewed for VOC emissions were catalytic oxidation and good combustion practices.

Catalytic Oxidation
The mechanism of catalytic oxidation was discussed previously. Oxidation catalysts are readily poisoned by even moderate concentrations of SO_2, such as those exiting the Lime Kiln. In addition, catalytic oxidation has not been successfully demonstrated in practice on a lime kiln. Weyerhaeuser concludes that the use of catalytic oxidation on the Lime Kiln is not technically feasible.

Good Combustion Practice
Good combustion practices involve parametric monitoring and controlling the operating parameters of the Lime Kiln to ensure continual operation as close to optimum conditions as possible. VOC emissions are minimized when the kiln temperature and excess oxygen availability are adequate for complete combustion. This is ensured by the use of oxygen sensors and routine tuning of the kiln burners.

VOC BACT Determination
The use of catalytic oxidation on a lime kiln is not technically feasible. Therefore, the best feasible control option for VOC from the kiln is the use of good combustion practices, appropriate BACT limit for VOC (as carbon) from the Lime Kiln is 0.3173 lb/ton CaO (0.0488 lb/MMBtu as propane)**,** averaged on a Weyerhaeuser fiscal month basis, which is consistent with recent BACT determinations in the RBLC database Weyerhaeuser Facility -2006 data.

Summary

BACT SUMMARY FOR THE MODIFIED/NEW LIME KILN

Pollutant	**Emission Limit**	**Control Technology**
CO	0.2 lb/MMBtu (Weyerhaeuser fiscal month average)	GCP
SAM	0.002 lb/MMBtu (Weyerhaeuser fiscal month average)	Lime Kiln (Inherent Scrubbing)
VOC (as propane)	0.0488 lb/MMBtu (Weyerhaeuser fiscal month average)	GCP

Chemical Recovery Furnace BACT Analysis

The new Recovery Furnace has been installed with appropriate BACT per (M-4) permitting.

Pollutant Formation Processes

The formation of SO_2 and SAM in the Recovery Furnace is somewhat different from the CFB Boiler. In addition to sulfur contained in the fuel combusted by the Recovery Furnace (including black liquor solids), sulfur is contained in the non-condensable gases that are fed to the Recovery Furnace for emission control. The Recovery Furnace also differs from other combustion sources, as the Recovery Furnace contains a reducing zone in the bottom of the furnace, below the primary burners. The formation of VOC in the Recovery Furnace is the same as in the CFB Boiler.

Chemical Recovery Furnace Control Technology Evaluations

Table below lists the control technologies identified as being commercially available for control of the listed pollutants from a Recovery Furnace. The potential control technologies were evaluated for each pollutant based on energy, environmental, and/or economic considerations. Consistent with U.S. EPA's top-down approach, the control technologies for each pollutant were considered in order of decreasing emission reduction potential.

POTENTIAL CONTROL TECHNOLOGIES FOR THE RECOVERY FURNACE

Pollutant	Listed Control Technologies	Potential Add-on Control Efficiency (%)
CO	Catalytic Oxidation	60-80
	Staged Combustion	40-60
	GCP	Base Case
SAM	Wet Scrubber	80-95
	Spray Dryer Absorber	70-90
	High Solids Firing	0.5 ppm
	Low Sulfur Fuels	30-70
	GCP	Base Case
VOC	Catalytic Oxidation	60-80
	Staged Combustion	40-60
	Non-Direct Contact Evaporators	Varies
	GCP	Base Case

* Control efficiencies obtained from AP-42 (9/98), Section 1.1, Tables 1.1-1 and 1.1-2.

Carbon Monoxide

The recovery furnace project was constructed under Permit 97-057-C (M-4) and did not trigger on CO, therefore a BACT determination was not required. That project is represented as part of Phase I. The Recovery Furnace shall be subject to the CO BACT requirement only if Project IIIB (BFB Boiler) is completed.

CO formation in the CRF is attributable to the same mechanisms as the found in the CFB/BFB boiler, which was discussed previously.

Sulfuric Acid Mist

The formation of SAM in the CRF is somewhat different from the CFB/BFB boiler. In addition to sulfur contained in the fuel combusted by the boiler (including black liquor solids), sulfur is contained in the non-condensable gases that are fed to the CRF for emission control. The CRF also differs from other combustion sources, as the CRF contains a reducing zone in the bottom of the furnace, below the primary burners.

Volatile Organic Compounds

The formation of VOC in the CRF is the same as in the CFB/BFB boiler, which was discussed.

Carbon Monoxide

Catalytic Oxidation

Catalytic oxidation has not been successfully demonstrated in practice on a CRF. The use of catalytic oxidation on the CRF is not technically feasible. Therefore, catalytic oxidation will not be considered for the remainder of this analysis.

Staged Combustion

In addition, the CRF boiler design uses a staged combustion technique. A portion of the combustion air is added with the fuel, with the remaining amount added above the primary ignition zone as overfire air. Staged combustion is frequently incorporated into new CRF designs to enhance capacity and control over the combustion process. Staged combustion can achieve CO outlet concentrations of 300 ppm (corrected to 8% oxygen).

Good Combustion Practices

GCP is the base case control for CO on a CRF and incorporates no additional controls.

CO BACT Determination

Staged combustion is the highest performing control option that has been demonstrated in practice and is selected as the control technology for CO from the CRF. The appropriate BACT limit for CO from the CRF is 300 ppm (corrected to 8% oxygen) on a Weyerhaeuser fiscal month basis, which is consistent with recent BACT determinations in the RBLC database. To account for short-term spikes in CO emission rates from the CRF, Weyerhaeuser also anticipates a short-term (daily average) CO limit of 1,000 ppm (corrected to 8% oxygen).

Sulfuric Acid Mist

In order to control emissions of SAM, emissions of SO_2 must be controlled. Therefore, the remainder of this analysis focuses on controlling emissions of SO_2.

Wet Scrubber
A review of U.S. EPA and state BACT analyses indicates that the use of wet scrubbers has not been successfully demonstrated on a commercial Recovery Furnace. Weyerhaeuser concludes that the use of a wet scrubber on the Recovery Furnace is not technically feasible.

Spray Dryer Absorber
A review of U.S. EPA and state BACT analyses indicates that the use of spray dryers has not been successfully demonstrated on a commercial Recovery Furnace. Weyerhaeuser concludes that the use of a spray dryer on the Recovery Furnace is not technically feasible.

High Solids Firing
The high solids firing technique involves firing black liquor with a high solids content in the Recovery Furnace. The solids content of the black liquor is increased to over 65% before it is fed to the Recovery Furnace. This results in the evaporation of less water from the solids, increasing the furnace bed temperature. The higher bed temperature improves reduction of sulfur in the Recovery Furnace and, thus, lowers SO_2 emissions.

Low Sulfur Fuels
The majority of the fuel burned in the Recovery Furnace is black liquor solids. Since this is how the Recovery Furnace serves its purpose in the Kraft pulping cycle, this cannot be changed. Therefore, the use of low sulfur fuels is not a technically feasible option for the Recovery Furnace.

Good Combustion Practices and Furnace Design
GCP is the base case control for SAM on a Recovery Furnace and incorporates no additional controls. The chemical recovery furnace (CRF) operates with three combustion zone. The concentrated black liquor is introduced into the middle zone of the furnace where water and volatile organics are evaporated from the liquor as it falls to the bottom. The bottom of the furnace is operated with reduced oxygen where the black liquor solids are pyrolyzed. Volatilized organic material rises up the furnace and molten organic salts (including NaS) are removed from the bottom of the furnace. The top of the furnace is operated as an oxidizing zone, where the combustion of organics is completed. The new CRF will have better capture of sulfur (lower SO_2 emissions) due to improved furnace design and higher black liquor solids firing. Higher black liquor solids entering the furnace produces increased bed temperatures in the bottom of the furnace and thus more sodium fume production. SO_2 capture in the CRF is understood to be facilitated by sodium fume reacting with the sulfur compounds to form sulfate that is collected as particulate. The overall sulfur capture rate of the new furnace will be over 99%.

SAM BACT Determination
High solids firing is the highest performing control option that has been demonstrated in practice and is selected as the control technology for SAM from the Recovery Furnace. The appropriate BACT limit for SAM from the Recovery Furnace is 0.5 ppm (corrected to 8% oxygen) averaged on a Weyerhaeuser fiscal month basis.

Volatile Organic Compounds

The control technologies reviewed for VOC emissions were catalytic oxidation, staged combustion, non-direct contact evaporator (NDCE) design, and good combustion practices.

Catalytic Oxidation
Catalytic oxidation was discussed previously. Catalytic oxidation has not been successfully demonstrated in practice on a Recovery Furnace. Weyerhaeuser concludes that the use of catalytic oxidation on the Recovery Furnace is not technically feasible.

Staged Combustion
Staged combustion is frequently incorporated into new Recovery Furnace designs to enhance capacity and control over the combustion process. Staged combustion can achieve VOC outlet concentrations of 40 ppm (corrected to 8% oxygen) when combined with the use of a NDCE design.

Non-Direct Contact Evaporator Design
The use of a NDCE design for the black liquor evaporation section of the Recovery Furnace is a technically feasible control technology and is frequently applied to modified and new Recovery Furnaces. Recent BACT analyses indicate that the use of the NDCE design, in conjunction with staged combustion, can result in VOC emissions of 40 ppm (corrected to 8% oxygen).

Good Combustion Practice
GCP is the base case control for VOC on a Recovery Furnace and incorporates no additional controls.

VOC BACT Determination
The use of staged combustion and the NDCE design is the highest performing control option that has been demonstrated in practice and is selected as the control technology for VOC from the Recovery Furnace. The appropriate BACT limit for VOC (as propane) from the Recovery Furnace is 40 ppm (corrected to 8% oxygen) averaged on a Weyerhaeuser fiscal month basis, which is consistent with recent BACT determinations in the RBLC database.

BACT SUMMARY FOR THE RECOVERY FURNACE

Pollutant	Emission Limit	Control Technology
CO	300 ppm @ 8% O_2 (Weyerhaeuser fiscal month average)	GCP
SAM	0.5 ppm @ 8% O_2 (Weyerhaeuser fiscal month average)	GCP
VOC (as propane)	40 ppm @ 8% O_2 (Weyerhaeuser fiscal month average)	Staged Combustion / NDCE

Paper Machines BACT Analysis

Pollutant Formation Processes

VOC is the only pollutant emitted by the paper machines subject to PSD review for this project. Emissions of VOC from the paper machines are attributed to paper machine additives and recycled process water. VOC are present in the water portion of the pulp stock that is fed to the paper machines. This VOC is volatilized during the drying process.

Various additives, including but not limited to, starch, alum, caustic, sulfuric acid, defoamer, felt cleaner, retention and drainage aids, and strength and size additives, may be added to the pulp slurry upstream of the paper machines to improve the final product quality and to maximize raw material utilization. VOC generated by these additives cannot be reasonably controlled, nor can substitute additives always be employed. Therefore, the BACT for VOC does not address control technologies relative to the use of different additives.

Paper Machine Control Technology Evaluations

The table below, lists the potentially feasible control technologies for VOC emissions from the paper machines.

POTENTIAL CONTROL TECHNOLOGIES FOR THE PAPER MACHINES

Pollutant	Listed Control Technologies	Potential Add-on Control Efficiency (%)
VOC	Thermal Oxidation	95+
	Catalytic Oxidation	95+
	Carbon Adsorption	95
	Biofiltration	60-90
	Wet Scrubber	Varies
	Good Operating Practices	Base Case

* Control efficiencies obtained from AP-42 (9/98), Section 1.1, Tables 1.1-1 and 1.1-2.

Thermal Oxidation

Thermal oxidation involves heat recovery with regenerative beds or recuperative heat exchanges by further combusting VOC-laden gases. Although no installations of thermal oxidizers for the control of paper machine exhausts have been required, this control option is considered technically feasible. Thermal oxidizers can achieve a VOC destruction efficiency of approximately 95%.

However, the volumetric flow rates of the paper machines are significantly large, and the VOC concentrations are very low, such that the installation and operation of a thermal oxidizer is economically infeasible. U.S. EPA has estimated annualized costs for regenerative thermal oxidizers at between \$8 and \$33 per scfm (U.S. EPA, “Air Pollution Control Technology Fact Sheet; Regenerative Incinerator”, EPA-452/F-03-021, p. 3.). This would yield “an order of magnitude” annualized cost of greater than \$20,500,000 (using \$20.5/scfm, the middle of the range). Since the uncontrolled amount of VOC emitted by the paper machines is approximately 830 ton/yr, and the thermal oxidizer can control approximately 95% of all VOC, the annualized cost effectiveness is greater than \$26,000 per ton of VOC removed. In addition to the cost, a thermal oxidizer of this size would emit between 309 and 926 ton/yr NO_x. VOC from paper machines are also difficult to capture, because of the large size of the paper machines and the fugitive nature of the emissions, creating an enormous problem (and expense) in simply capturing the emissions.

Weyerhaeuser concludes that the use of thermal oxidation on paper machines is not economically feasible and has adverse environmental impacts, based on the additional generation of NO_x emissions. DEQ agrees with this conclusion.

Catalytic Oxidation
Catalytic oxidation is similar to thermal oxidation for control of VOC emissions from paper machines and can achieve similar control efficiency. However, catalytic oxidation uses catalysts to lower the required energy levels, such that oxidation can be accomplished at a lower temperature. As a result, the necessity for auxiliary fuel will be lower than a thermal oxidizer. Although no installations of catalytic oxidizers for the control of paper machine exhausts have been required, this control option is considered technically feasible. Based on the characteristics of the paper machine exhaust streams, there are no specific issues suggesting that a catalytic oxidizer is not technically feasible.

The capital cost of a catalytic oxidizer is typically higher than the capital cost of a thermal oxidizer. Based on the conservative (i.e., less than actual cost) cost evaluation for a thermal oxidizer, the cost effectiveness of catalytic oxidation is at least $26,000 per ton of VOC removed. In addition, since catalytic oxidation systems are very sensitive to particulates (especially wood fiber), some form of additional particulate control to address emissions during a process upset would be required to ensure reliable operation, further increasing the capital costs. Thus, catalytic oxidation is considered economically infeasible.

Carbon Adsorption
Carbon adsorption is a VOC control technique that uses activated carbon as an adsorbent. VOC has a strong affinity for the surface of activated carbon; this affinity is higher as the temperature of the gas stream is reduced.

In the carbon adsorption process, VOC-laden gases are passed through a bed of activated carbon. The VOC adsorbs onto the surface of the carbon until the amount of VOC adsorbed on the carbon is in equilibrium with the VOC concentration in the gas stream. Prior to reaching equilibrium, the VOC on the carbon is stripped off using steam or hot air and then condensed. Carbon adsorption can achieve VOC control efficiencies of approximately 95%; however, the efficiency of carbon adsorption is highly dependent on the VOC being adsorbed, the concentration of the VOC, and the conditions of the gas stream.

Carbon adsorption is most efficient when VOC inlet concentrations are between 100 and 5,000 ppm, and the gas stream is cool and at moderate or low relative humidity. The gas stream from the paper machines is at or near saturation with water vapor at a temperature of approximately 165 °F. In addition, the VOC concentration in the paper machine exhaust is lower than the optimum carbon adsorption operating range. Therefore, the performance of the carbon adsorber under these conditions will be very poor.

The primary VOC emitted by paper machines is methanol. Carbon adsorption is a poor choice for controlling methanol because of the poor adsorption isotherm for methanol. Carbon and zeolite can be used in series to improve the control efficiency, but overall control is still poor (Frank Hussey and Ajay Gupta, "Using Carbon and Zeolite For VOC Removal," from ESD-The Engineering Society, Proceedings of the Advanced Coatings Technology Conference, April 7-10, 1997, Detroit, MI). The combination of all of these factors make it unlikely that carbon adsorption will produce any significant VOC reductions on the paper machines without chilling the entire inlet stream, which is likely to be extremely expensive. VOC from paper machines are also difficult to capture, because of the large size of the paper machines and the fugitive nature of the emissions, creating an enormous problem (and expense) in simply capturing the emissions.

Additionally, a review of U.S. EPA and state BACT analyses indicates that the use of carbon absorbers has not been successfully demonstrated on paper machines. Additionally, spent carbon from the adsorber must be regenerated either at an on-site regeneration facility or by an off-site activated carbon supplier. Weyerhaeuser concludes that the use of carbon adsorption on paper machines is not technically feasible.

Biofiltration

Biofiltration is the use of bacteria and other microbes to remove VOC from a gas stream. Biofiltration is a relatively new technology where VOC-laden gas is pushed through a bed containing a fixed media with microorganisms attached to the media. The organisms consume the VOC as part of their metabolism, creating CO_2 and organism mass.

Since biofiltration is a biological – not physical – technology, it is highly sensitive to process conditions. Biofilters work best with saturated gas streams at approximately 90 to 100 °F, with a consistent flowrate and organic concentration. Since the gas stream from the paper machines is approximately 165 °F, the gas stream would have to be cooled before being fed to the biofilter, which would release a relatively large amount of heat energy and result in the generation of a large amount of water. Additionally, based on the large exhaust gas flow rates from the paper machines, a substantial amount of space would be needed to locate a biofilter.

As mentioned previously, the engineering problems associated with cooling the paper machine exhaust stream to an acceptable temperature for the biofilter are significant. Biofiltration is an unproven technology with regard to applications for the exhaust from paper machines, and no installations in paper machines are known. Weyerhaeuser concludes that the use of biofiltration on the paper machines is not technically feasible.

Wet Scrubber

Wet scrubbing involves the use of a packed tower, spray tower, or venturi to remove water-soluble VOC from the gas stream by contacting the gas stream with water droplets. The VOC-laden water is then treated to remove the VOC and returned to the scrubber.

Methanol is a primary VOC compound in the exhaust from the No. 2 and No. 3 Paper Machines. Conventional packed wet scrubbers recirculate a large flow of the scrubbing liquid. According to a scrubber vendor (Sly Incorporated), such a scrubbing system is ineffective to control methanol, based on its high Henry's law constant. A once-through water scrubber can achieve reasonable methanol control efficiency. However, performance of a once-through scrubber with respect to control of pinenes and terpenes, which are also important VOC constituents in paper machine exhausts, are unknown, and this type of scrubber is expected to be ineffective for these compounds based on their chemical properties. There are many other types of VOC in the stream that also need to be controlled. Designing a scrubbing system and formulating a scrubbing reagent for all of these VOC are infeasible. Therefore, the wet scrubber control option is considered to be technically infeasible and will not be considered further in this analysis.

VOC BACT Determination
There are no technically and/or economically feasible control technologies for controlling VOC from the paper machines. Several technically feasible options are economically infeasible, primarily based on the high exhaust gas flow and the low pollutant loadings. Therefore, good operating practices are determined as BACT for the paper machines.

OCC Plant BACT Analysis

Pollutant Formation Process

VOC is the only pollutant emitted by the OCC Plants that is subject to PSD review for this project. The OCC Plants take in used containers, re-pulp them, and separate foreign particles from the pulp. This pulp is then used in the paper machines to produce new product. VOC emissions from the OCC Plants are released from fugitive emission sources.

OCC Plant Control Technology Evaluations

Because no control technology information is available in the RBLC database for VOC emissions from OCC plants, a set of potential control technologies are identified, based on commonly available VOC control technologies. Table below, lists the potential technically feasible control technologies for controlling VOC from the OCC Plants. These control technologies were described in the previous section and will not be discussed here.

POTENTIAL CONTROL TECHNOLOGIES FOR OCC PLANTS

Pollutant	Listed Control Technologies	Potential Add-on Control Efficiency (%)
VOC	Thermal Oxidation	95+
	Catalytic Oxidation	95+
	Carbon Adsorption	95+
	Biofiltration	60-90
	Wet Scrubber	Varies
	Good Operating Practices	Base case

* Control efficiencies obtained from AP-42 (9/98), Section 1.1, Tables 1.1-1 and 1.1-2.

Thermal Oxidation

The mechanism of thermal oxidation of VOC in the OCC Plants is the same as for the paper machines. Although no installations of thermal oxidizers for the control of OCC plant exhausts have been required, this control option is considered technically feasible.

However, the volumetric flow rates of the OCC Plants are significantly large, and the VOC concentrations are very low, such that the installation and operation of a thermal oxidizer is economically infeasible. U.S. EPA has estimated annualized costs for regenerative thermal oxidizers at between \$8 and \$33 per scfm (U.S. EPA, “Air Pollution Control Technology Fact Sheet; Regenerative Incinerator”, EPA-452/F-03-021, p. 3). This would yield “an order of magnitude” annualized cost of greater than \$8,200,000 (using \$20.5/scfm, the middle of the range). Since the uncontrolled amount of VOC emitted by the OCC Plants is approximately 37 ton/yr, and the thermal oxidizer can control approximately 95% of all VOC, the annualized cost effectiveness is greater than \$220,000 per ton of VOC removed. In addition to the cost, a thermal oxidizer of this size would emit between approximately 123 and 370 ton/yr NO_x. VOC from OCC plants are also difficult to capture, because of the fugitive nature of the emissions, creating an enormous problem (and expense) in simply capturing the emissions.

Weyerhaeuser concludes that the use of thermal oxidation on OCC plants is not economically feasible and has adverse environmental impacts, based on the additional generation of NO_x emissions. DEQ agrees with this conclusion.

Catalytic Oxidation

The mechanism of catalytic oxidation of VOC in the OCC Plants is the same as for the paper machines. Although no installations of catalytic oxidizers for the control of OCC plant exhausts have been required, this control option is considered technically feasible. However, the capital cost of a catalytic oxidizer is typically higher than the capital cost of a thermal oxidizer. Based on the conservative (i.e., less than actual cost) cost evaluation for a thermal oxidizer, the cost effectiveness of catalytic oxidation is at least \$220,000 per ton of VOC removed. In addition, since catalytic oxidation systems are very sensitive to particulates (especially wood fiber), some form of additional particulate control to address emissions during a process upset would be required to ensure reliable operation, further increasing the capital costs. Thus, catalytic oxidation is considered economically infeasible.

Carbon Adsorption

Carbon adsorption was determined to be not technically feasible for paper machines as it was discussed before. The mechanism of carbon adsorption of VOC in the OCC Plants is the same as for the paper machines. Therefore, carbon adsorption is also not technically feasible for the OCC Plants.

Biofiltration

Biofiltration was determined to be not technically feasible for paper machines as it was discussed before. The mechanism of biofiltration of VOC in the OCC Plants is the same as for the paper machines. Therefore, biofiltration is also not technically feasible for the OCC Plants.

Wet Scrubber
Wet scrubbing was determined to be not technically feasible for paper machines as it was discussed before. The mechanism of wet scrubbing of VOC in the OCC Plants is the same as for the paper machines. Therefore, wet scrubbing is also not technically feasible for the OCC Plants.

VOC BACT Determination
There are no technically and/or economically feasible control technologies for controlling VOC from the OCC Plants. Several technically feasible options are economically infeasible, primarily based on the high exhaust gas flow and the low pollutant loadings. Therefore, good operating practices are determined as BACT for the OCC Plants.

SECTION VIII. AIR QUALITY IMPACTS

For any pollutant exceeding its PSD SER as part of a new construction or modification, a PSD air impacts analysis is required to demonstrate compliance with any applicable ambient air quality standards established for that pollutant. As identified in Section 5 of the permit application, the creditable emissions increases from the proposed project exceed the PSD SER for VOC and SAM, and CO during the Phase III_B option. A PSD air quality analysis is not conducted for SAM, since no NAAQS or PSD Increments for this pollutant have been established. During the (M-4) permit evaluation, it was demonstrated that the project was in compliance with the state toxics standard (OAC 252:100-41) for sulfuric acid mist. Subchapter 41 no longer exists.

U.S. EPA regulates VOC as precursors to tropospheric ozone formation. Ozone is unique because U.S. EPA has not established a PSD modeling significance level (an ambient concentration expressed in either micrograms per cubic meter [$\mu g/m^3$] or parts per million by volume [ppm_v]) for ozone. U.S. EPA has established an ambient monitoring *de minimis* level, which is different from other criteria pollutants, because it is based on a mass emission rate (100 tpy) instead of an ambient concentration (in units of $\mu g/m^3$ or ppm_v).

Previously, the Scheffe Method was utilized to calculate the increase in ozone concentration due to a proposed project for the 1-hour ozone standard. Since the proposed project (M-4) net VOC emissions exceeded the applicable PSD SER, the Scheffe Method was employed to determine whether the proposed project will cause or contribute to a violation of the currently enforced 1-hour ozone NAAQS (Scheffe, Richard D., *VOC/NOx Point Source Screening Tables,* U.S. EPA OAQPS Technical Support Division, Draft Document, September 1988).

The Scheffe Method was the screening procedure used to calculate the ambient ozone concentration resulting from a source. A series of lookup tables, based on the Reactive Plume Model-II, was used to conservatively estimate the ozone concentration increase. Use of the Scheffe Method required knowledge of the ratio of maximum annual non-methane volatile organic compounds (NMVOC) to NO_x emissions from the facility. The lookup tables had been validated for $NMVOC/NO_x$ values ranging from 1 to 30. The user was cautioned against interpolating from the tables for values outside this range. In addition, it was generally accepted that $NMVOC/NO_x$ ratios less than 2:1 resulted in no significant increase in ozone (Texas

Commission on Environmental Quality (formerly Texas Natural Resource Conservation Commission), *Air Quality Modeling Guidelines*, Draft Document, February 1999).

The post-project facility-wide VOC/NO_x ratio from (M-4) was 1.17:1. Since the post-project facility-wide VOC emissions total included methane emissions, it followed that the NMVOC/NO_x ratio would be less than 1.17:1. As the NMVOC/NO_x ratio was less than 2:1, the Valliant Mill was considered NO_x-dominated, and the NMVOC/NO_x ratio was not conducive to ozone formation, and no significant increase in ozone would be expected.

Weyerhaeuser conducted ambient air monitoring for ozone in the summer of 2005 in relation to the VOC increase for this project. Monitoring data indicates that the area is within the ambient standard for ozone.

The EPA has implemented a new ozone standard with an 8-hour averaging period. There are no current EPA guidelines on determining a single facility's impact on ozone concentrations. Based on the lack of guidance and an endorsed method of calculating an increase in ozone concentration for an 8-hour averaging period, and the fact that the proposed modifications to (M-4) result in a VOC increase of 189 tpy, no significant increase in ozone concentrations is expected from this proposed project.

Under the (M-4) permit evaluation, VOC emissions were calculated on an 'as carbon' basis. During this permit modification for purposes of new source review applicability determination, VOC's were calculated with pinene for the chip handling, chip and bark stacks, methanol for the waste water treatment system, OCC, causticizing area, and paper machines, methanol/pinene for the brownstock washers and propane for all other sources.and paper machines, and propane for all other sources.

The facility submitted documentation (included in the permit application) showing compliance with the NAAQS and PSD Increment standards for CO. Air dispersion modeling analysis demonstrated that emissions from the construction of the proposed sources did not cause or contribute to a violation of NAAQS or PSD Increment. The Class II Modeling Significance Levels (MSLs) were not exceeded for CO for any averaging period.

The property occupied by Valliant Chips, Inc., an unrelated third party, was included in the modeling analysis as ambient air.

CLASS II SIGNIFICANCE MODELED CONCENTRATIONS (MICROGRAMS/M^3)

Year	CO 8-Hr	CO 1-Hr
2001	49.68	119.71
2002	48.87	111.85
2003	45.91	142.52
2004	49.17	138.81
2005	45.34	125.37
Maximum	**49.68**	**142.52**
NAAQS	10,000	40,000
Monitoring De Minimis	575	--
Class II MSL	500	2,000
Full Impact Analysis Required?	**No**	**No**

SECTION IX. Additional Impacts Analysis

The PSD additional impacts analysis depends on existing air quality, the quantity of emissions, and the sensitivity of local soils, vegetation, and visibility in the source's impact area. The analysis is presented in four parts:

- Growth analysis
- Soils and vegetation analysis
- Visibility impairment analysis
- Class I Area impact analysis

<u>Growth Analysis</u>
The elements of the growth analysis include a projection of the associated industrial, commercial, and residential growth that will occur in the area of impact attributable to the source, including the potential impact on ambient air resulting from this growth. The Valliant Mill is an existing facility, and therefore is not expected to cause a significant shift of population or an increase in industrial, commercial, and residential growth in the area. Since no significant associated commercial, industrial, or residential growth is expected as a result of the project, negligible growth-related ambient air impacts are expected.

<u>Soil and Vegetation Analysis</u>
A soil and vegetation analysis examines the characteristics of soils and vegetation in the impact area and determines if the air emissions from proposed project will create significant harmful effects. The secondary NAAQS are intended to protect the public welfare from adverse effects of airborne pollutants. This protection extends to agricultural soil and vegetation.

McCurtain County has an area of 1,825 square miles. According to the Soil Conservation Service, most of the soils are fine sandy loams with a pH in the acidic range (4.5 to 6.5). The vegetation is primarily forest and pasture. The Oklahoma Department of Agriculture reported that less than 6% of the county land area is cropland. The surrounding counties in Oklahoma, Texas, and Arkansas have similar conditions, but the proportion of cropland increases upon crossing the Red River into Texas, 7 miles south of the Valliant Mill. The majority of the land surrounding the Valliant Mill is commercial timber production, most of it owned or managed by Weyerhaeuser.

As discussed before, the ambient air impacts from the proposed project are not expected to cause or contribute to an exceedance of the primary or secondary NAAQS. Therefore, no significant adverse impact on soil and vegetation is anticipated.

Visibility Impairment Analysis

A visibility impairment analysis examines the visual quality in the impact area of the proposed project and determines if the affected emission sources will contribute to significant visibility impairment. The proposed project will not result in a net emissions increase of NO_x, SO_2, PM, or PM_{10}. Since there is no net emissions increase in visibility impairing pollutants, the maximum potential impacts from the proposed project are not expected to impact visibility in the surrounding area.

SECTION X. Class I Area Impact Analysis

Class I Areas are defined by the U.S. EPA’s New Source Review Manual as those areas of the nation that are of special natural, scenic, recreational, or historic interest to the public. The closest Class I Area to the Valliant Mill is the Caney Creek Wilderness Area, which is located approximately 97 kilometers (km) northeast of the facility. This Class I Area is managed by the U.S. Forest Service (FS).

Class I Area analyses examine two separate items: (1) Class I Increments and (2) Air Quality Related Values (AQRVs). Class I Increment modeling is explicitly required by U.S. EPA under the PSD program and is reviewed for approval by the state permitting agency. Class I Areas have a separate set of PSD Increments for PM_{10}, SO_2, and NO_x that are more stringent than the typically considered Class II Increments. The proposed project will not result in a net emissions increase of PM_{10}, SO_2, and NO_x. Therefore, a Class I Increment modeling analysis is not warranted.

In addition to the Increment analysis required for the protection of human health and welfare, additional air quality analyses can be requested to ensure that the natural and cultural resources of certain designated national parks and wilderness areas (i.e., Class I Areas) are not adversely impacted by air pollution. Federal Land Managers (FLMs) are tasked with protecting specific Class I Areas and have defined AQRVs to assess the impacts of new and existing facilities on these areas. These AQRVs include visibility, regional haze, and the deposition of nitrates and sulfates in soil and surface waters. The maximum potential air quality impacts from the proposed project are not expected to significantly impact any AQRVs in the Caney Creek Wilderness Area.

SECTION XI. OKLAHOMA AIR POLLUTION CONTROL RULES

OAC 252:100-1 (General Provisions) [Applicable]
Subchapter 1 includes definitions but there are no regulatory requirements.

OAC 252:100-2 (Incorporation by Reference) [Applicable]
The purpose of this Subchapter is to incorporate by reference applicable provisions of Title 40 of the Code of Federal Regulations. The provisions of Title 40 of the Code of Federal Regulations listed in OAC 252:100, Appendix Q are hereby incorporated by reference as they existed on September 1, 2006.

OAC 252:100-3 (Air Quality Standards and Increments) [Applicable]
Primary Standards are in Appendix E and Secondary Standards are in Appendix F of the Air Pollution Control Rules. At this time, all of Oklahoma is in attainment of these standards. This construction project is not expected to cause or contribute to a violation of the NAAQS.

OAC 252:100-5 (Registration, Emissions Inventory and Annual Operating Fees) [Applicable]
Subchapter 5 requires sources of air contaminants to register with Air Quality, file emission inventories annually, and pay annual operating fees based upon total annual emissions of regulated pollutants. Weyerhaeuser will continue to submit required annual emissions information (Turn Around Document) and emission fees to the Air Quality Division.

OAC 252:100-8 (Permits for Part 70 Sources) [Applicable]
Part 5 includes the general administrative requirements for Part 70 permits. Any planned changes in the operation of the facility which result in emissions not authorized in the permit and which exceed the "Insignificant Activities" or "Trivial Activities" thresholds require prior notification to AQD and may require a permit modification. Insignificant activities mean individual emission units that either are on the list in Appendix I (OAC 252:100) or whose actual calendar year emissions do not exceed the following limits:

- 5 TPY of any one criteria pollutant
- 2 TPY of any one hazardous air pollutant (HAP) or 5 TPY of multiple HAPs or 20% of any threshold less than 10 TPY for a HAP that the EPA may establish by rule

Part 7 includes the requirements for PSD projects in attainment areas. This project is classified as a significant modification to a major facility. Since this is a physical change that requires a significant modification, a construction permit is required. The Title V permit application for this facility will be updated as required to reflect the modifications associated with this project. The Title V permit application was updated in a timely manner to incorporate the New Recovery furnace project, including the new mix tanks and smelt dissolving tank.

OAC 252:100-9 (Excess Emission Reporting Requirements) [Applicable]
In the event of any release which results in excess emissions, the owner or operator of such facility shall notify the Air Quality Division as soon as the owner or operator of the facility has knowledge of such emissions, but no later than 4:30 p.m. the next working day. Within ten (10)

working days after the immediate notice is given, the owner or operator shall submit a written report describing the extent of the excess emissions and response actions taken by the facility. In addition, if the owner or operator wishes to be considered for the exemption established in 252:100-9-3.3, a Demonstration of Cause must be submitted within 30 calendar days after the occurrence has ended.

OAC 252:100-13 (Open Burning) [Applicable]
Open burning of refuse and other combustible material is prohibited except as authorized in the specific examples and under the conditions listed in this subchapter.

OAC 252:100-17 (Incinerators) [Not Applicable]
Part 9 of Subchapter 17 regulates commercial and industrial solid waste incineration units constructed on or before November 30, 1999. Construction of all sources as part of the project will take place after this date.

OAC 252:100-19 (Particulate Matter (PM)) [Applicable]
Subchapter 19 specifies a PM emission limitation from fuel-burning equipment and industrial processes. Subchapter 19 specifies PM emissions limitations based on heat input capacity. Weyerhaeuser considers the heat input capacity of the new equipment to be confidential. For the new CFB or BFB Boiler, Recovery Furnace, and Lime Kiln applicable permit limitations are more stringent than Subchapter 19, therefore they are in compliance with Subchapter 19.

This subchapter limits emissions of particulate matter from processes other than fuel-burning equipment based on their process weight rate. All the new equipment's emissions rates of PM are in compliance with the allowable PM emissions under Subchapter 19.

OAC 252:100-25 (Visible Emissions and Particulates) [Applicable]
No discharge of greater than 20% opacity is allowed except for short-term occurrences which consist of not more than one six-minute period in any consecutive 60 minutes, not to exceed three such periods in any consecutive 24 hours. In no case shall the average of any six-minute period exceed 60% opacity. Emission units subject to an NSPS opacity limit are exempt from this section. The new boilers, kilns and other emission units are subject to opacity limits under NSPS and are exempt from this subchapter.

OAC 252:100-29 (Fugitive Dust) [Applicable]
Subchapter 29 prohibits the handling, transportation, or disposition of any substance likely to become airborne or wind-borne without taking "reasonable precautions" to minimize emissions of fugitive dust. No person shall cause or permit the discharge of any visible fugitive dust emissions beyond the property line on which the emissions originate in such a manner as to damage or to interfere with the use of adjacent properties, or cause air quality standards to be exceeded, or to interfere with the maintenance of air quality standards. Most of the materials handled are wood/wood waste, therefore non-brittle and not very susceptible to becoming fugitive dust. Haul roads and the landfill are watered to minimize emissions of fugitive dust. The permit will require reasonable precautions to minimize fugitive dust.

OAC 252:100-31 (Sulfur Compounds) [Applicable]
Part 2 limits the ambient air impact of sulfur dioxide (SO_2) emissions from any existing facility or any new petroleum and natural gas process facility subject to OAC 252:100-31-26(a)(1). The ambient air quality modeling summarized in the following table demonstrates compliance with the SO_2 standards.

COMPLIANCE WITH SO_2 AMBIENT IMPACTS LIMITATIONS

Averaging Period	Ambient SO_2 Impacts Limitation, ug/m^3	Modeled SO_2 Impacts, ug/m^3
3-Hours	650	299
24-Hours	130	104

Part 2 also limits H_2S impacts to 0.2 ppm (24 hour average). Compliance with this standard was the subject of Consent Order 99-026 which has been closed.

Part 3 specifies limitations on total reduced sulfur compounds emissions. The following table lists the standards of Subchapter 31 for existing Kraft paper mills

COMPLIANCE WITH TRS EMISSIONS LIMITATIONS

Emission Unit	TRS Emission Limitation of OAC 252:100-31 (12-hour average as H_2S on a dry basis)	TRS Emission Rate Test Results
Recovery Furnace	40 ppm @ 8% O_2	1.02 ppm @8% O_2 (2007)
Lime Kiln	40 ppm @ 10% O_2	31.3 ppm @10% O_2 (1989)
Smelt Dissolving Tanks	0.016 g TRS per kilogram (0.033 lb/ton) black liquor solids	Emits through the new Recovery Furnace (2007)
NCG Thermal Oxidizer, when incinerating NCGs from the evaporators and digesters	5 ppm by volume	0.9 ppm (4/5-6/02 stack test)

Part 5 limits sulfur dioxide emissions from new equipment (constructed after July 1, 1972). For gaseous fuels, the limit is 0.2 lbs/MMbtu heat input; for liquid fuels, the limit is 0.8 lb/MMBTU; and for solid fuels, the limit is 1.2 lb/MMBTU. The permitted SO_2 emission rates are much more stringent than Subchapter 31 limits.

Part 5, Section 27 addresses sulfur oxide emission limits from blow pits, washer vents, storage tanks, digester relief, and recovery furnace of any new pulp mill. The Valliant Mill began operation in 1971; therefore, this section does not apply.

OAC 252:100-33 (Nitrogen Oxides) [Applicable]
Subchapter 33 affects new fuel-burning equipment with a rated heat input of 50 MMBTUH or more. The CFB or BFB Boiler and the Recovery Furnace emission rates are in compliance with

the applicable limitations of Subchapter 33. The Lime Kiln burns a combination of solid and gaseous fuels for which there is no applicable limitation.

OAC 252:100-35 (Carbon Monoxide) [Not Applicable]
None of the following affected processes are part of this project: gray iron cupola, blast furnace, basic oxygen furnace, petroleum catalytic reforming unit or petroleum catalytic cracking unit.

OAC 252:100-37 (Volatile Organic Compounds) [Applicable]
Part 3 requires storage tanks constructed after December 28, 1974, with a capacity of 400 gallons or more and containing a VOC with a vapor pressure greater than 1.5 psia at maximum storage temperature to be equipped with a permanent submerged fill pipe or with an organic vapor recovery system. No new storage tanks within these thresholds are proposed for this project.
Part 5 limits the VOC content of paints and coatings. The Valliant Mill does not normally conduct coating or painting operations except for routine maintenance, which is exempt.
Part 7 also requires fuel-burning equipment to be operated and maintained so as to minimize emissions. Temperature and available air must be sufficient to provide essentially complete combustion. The equipment at this location is subject to this requirement.

OAC 252:100-42 (Toxic Air Contaminants (TAC)) [Applicable]
This subchapter regulates toxic air contaminants (TAC) that are emitted into the ambient air in areas of concern (AOC). Any work practice, material substitution, or control equipment required by the Department prior to June 11, 2004, to control a TAC, shall be retained, unless a modification is approved by the Director. Since no AOC has been designated there are no specific requirements for this facility at this time.

OAC 252:100-43 (Testing, Monitoring, and Recordkeeping) [Applicable]
This subchapter provides general requirements for testing, monitoring and recordkeeping and applies to any testing, monitoring or recordkeeping activity conducted at any stationary source. To determine compliance with emissions limitations or standards, the Air Quality Director may require the owner or operator of any source in the state of Oklahoma to install, maintain and operate monitoring equipment or to conduct tests, including stack tests, of the air contaminant source. All required testing must be conducted by methods approved by the Air Quality Director and under the direction of qualified personnel. A notice-of-intent to test and a testing protocol shall be submitted to Air Quality at least 30 days prior to any EPA Reference Method stack tests. Emissions and other data required to demonstrate compliance with any federal or state emission limit or standard, or any requirement set forth in a valid permit shall be recorded, maintained, and submitted as required by this subchapter, an applicable rule, or permit requirement. Data from any required testing or monitoring not conducted in accordance with the provisions of this subchapter shall be considered invalid. Nothing shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed. All required tests shall be made and the results calculated in accordance with test procedures described or referenced in the permit and approved by Air Quality.

The following Oklahoma Air Pollution Control Rules are not applicable to this facility:

OAC 252:100-11	Alternative Emissions Reduction	not eligible
OAC 252:100-15	Mobile Sources	not in source category
OAC 252:100-17	Incinerators	not type of emission unit
OAC 252:100-23	Cotton Gins	not type of emission unit
OAC 252:100-24	Grain, Feed, or Seed Facility	not in source category
OAC 252:100-39	Non-attainment Areas	not in a subject area
OAC 252:100-47	Municipal Solid Waste Landfills	not type of source category

SECTION XII. FEDERAL REGULATIONS

PSD, 40 CFR Part 52 [Applicable]
The facility has been issued four PSD permits. These permits were issued following demonstrations that insure that the facility will not cause or contribute to a violation of a NAAQS, PSD increment, or adversely affect visibility or other air quality related value (AQRV). Since the net emissions increase from the project will exceed the PSD significant emission rate for CO, VOC and SAM, PSD review was applicable for these pollutants. The facility is a major source for NOx, CO, SO_2, PM_{10}, and VOC. Any future increases must be evaluated in the context of PSD significance levels: 40 TPY NOx, 100 TPY CO, 40 TPY SO_2, 15 TPY PM_{10}, 40 TPY VOC, 10 TPY TRS, or 0.6 TPY lead.

NSPS, 40 CFR Part 60 [Subparts A, D, Db, BB and IIII are Applicable]
NSPS require new, modified, or reconstructed sources to control emissions to the level achievable by the best demonstrated technology specified in the applicable provisions. NSPS regulations apply to any "affected" facility, "modification" of an existing affected facility, or "reconstruction" of an existing affected facility for which construction commences after the date of proposal of NSPS. The new Recovery Furnace project including the new Smelt Dissolving Tank and Mix Tanks, modified/ new Lime Kilns, new CFB/BFB Boiler, and the new/modified brownstock washing systems are units associated with the project that are affected by an NSPS.
Subpart A (General Provisions) requires the submittal of several notifications for NSPS-affected sources. These provisions apply and appropriate notifications are required.
Subpart D (Steam Generating Units) affects boilers with a rated heat input greater than 250 MMBTUH which commenced construction, reconstruction, or modification after August 17, 1971. This subpart affects the existing Bark Boiler, specifying emissions limitations of 0.8 lb/MMBTU SO_2, 0.10 lb/MMBTU PM, and 0.3 lb/MMBTU NOx. CEMS systems measuring opacity, NOx, SO_2, and a diluent gas (CO_2 or O_2) are required. The Bark Boiler is exempt from the opacity monitoring requirement. The existing Bark Boiler may be decommissioned in the future as part of this project.
Subpart Db (Commercial-Industrial-Institutional Steam Generating Units) affects boilers with a rated heat input above 100 MMBTUH which commenced construction, reconstruction, or modification after June 19, 1984. This subpart affects the CFB/BFB Boiler. The permit will require compliance with all applicable requirements of this subpart. Weyerhaeuser has taken a federally enforceable annual natural gas usage limit on the Recovery Furnace. Therefore, the

subpart Db NO_X limits do not apply. Should natural gas usage increase above the specified limitation, applicable requirements of this subpart will apply.

Subpart Kb (Volatile Organic Materials Storage Vessels) affects tanks with a capacity above 19,812 gallons which commenced construction, reconstruction, or modification after July 23, 1984. The project does not propose any new or modified storage vessels exceeding the de minimis capacities and/or vapor pressures specified in 40 CFR Part 60.110b(b). Therefore, this subpart is not applicable.

Subpart Y (Coal Preparation Plant) affects thermal dryers, pneumatic coal cleaning equipment (air tables), coal processing and conveying equipment (including breakers and crushers), coal storage systems, and coal transfer and loading systems at any coal preparation plant that commences construction or modification after October 24, 1974. The Valliant Mill is not considered a coal preparation plant, as it does not operate any of the processes identified in 40 CFR Part 60.251(a): breaking, crushing, screening, wet or dry cleaning, and thermal drying of coal. Therefore, this subpart is not applicable.

Subpart BB (Kraft Paper Mills) affects each digester system, brown stock washer system, multiple-effect evaporator, recovery furnace, smelt dissolving tank, lime kiln, and condensate stripper system (i.e., steam stripping system) in kraft pulp mills, for which construction, modification, or reconstruction is commenced after September 24, 1976. The No. 2 brownstock washer and spent liquor concentrator were modified after the effective date; therefore they are subject to NSPS, Subpart BB. The Lime Kiln and the NCG Thermal Oxidizer are pollution control devices for equipment subject to Subpart BB. Subpart BB prohibits discharge into the atmosphere of gases that contain total reduced sulfur (TRS) in excess of 5 ppm by volume unless the gases are combusted in an incinerator or other device not subject to the provisions of this subpart and are subjected to a minimum temperature of 1200 ºF for at least 0.5 seconds. Subpart BB requires a continuous monitoring system and describes excess emissions as periods in excess of 5 minutes in duration in which the combustion temperature at the point of incineration is less than 1200ºF. The applicant will maintain compliance with NSPS, Subpart BB by continuously monitoring the control device combustion temperature and using engineering calculations to determine residence time. The Lime Kiln is also subject to this subpart when combusting exhaust gases as a back up to the NCG Collection System and Thermal Oxidizer. The new Recovery Furnace, new/modified Lime Kilns, new Smelt Dissolving Tank, and the new/modified brownstock washing systems are subject to this subpart. During the new Recovery Furnace project, the thermal oxidizer was put into an emergency backup mode. The new Recovery Furnace is now the primary combustion source for the NCGs/SOGs. The permit will require compliance with all applicable requirements for each affected emission unit.

Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. This subpart affects stationary compression ignition (CI) internal combustion engines (ICE) based on power and displacement ratings, depending on date of construction, beginning with those constructed after July 11, 2005. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. The facility shall comply with the provisions of Subpart IIII for any engines it owns and operates that are subject.

Subpart JJJJ, Stationary Spark Ignition (SI) Internal Combustion Engines (ICE). This subpart was proposed on June 12, 2006. For the purposes of this subpart, the date of construction is the date the engine is ordered by the owner or operator. All owners or operators of SI ICE will be required to keep records of all maintenance conducted on an engine per 40 CFR 60.4245(a)(2).

NESHAP, 40 CFR Part 61 [Subpart E Applicable]
Subpart E (Mercury Emissions) affects wastewater treatment sludge incineration, limiting mercury emissions to 3,200 grams per 24-hour period. This standard affects the Bark Boiler, which combusts water treatment sludges. The permit will require compliance with all applicable requirements.

NESHAP, 40 CFR Part 63 [Subparts S and MM, are Applicable]
There are two subparts that affect the Pulp and Paper Industry. The provisions of these subparts apply to a major source that uses the following processes and materials:

1. Kraft, soda, sulfuric, or semi-chemical pulping processes using wood; or
2. Mechanical pulping processes using wood; or
3. Any process using secondary or non-wood fibers.

Subpart S (Pulp & Paper Industry) establishes MACT standards for control of HAPs pulp and paper production which were finalized and published in the Federal Register on April 15, 1998. These standards will affect knotter systems (wood knot removal systems), pulp screens, pulp washing systems, decker systems, digester vents, evaporator system vents, turpentine recovery systems, weak liquor evaporators, and other high-volume-low-concentration (HVLC) and low-volume-high-concentration (LVHC) systems. The pulp washing systems were allowed until April 17, 2006, to achieve compliance provided that the owner or operator established milestones of progress and dates by which these are achieved. The Valliant Mill has an approved Clean Condensate Alternative program which is in compliance for the brownstock washing systems requirement.

There are several units not affected by Subpart S but which do have significant HAP emissions. In addition to the No. 3 Digester system (semi-chemical process), Subpart S does not affect the paper machines; applicability ends at the last pulp washing step. The OCC plants are “secondary fiber” processes, but the only standards of Subpart S which affect secondary fiber processes are for bleaching units; there is no bleaching unit at this facility. The new/modified brownstock washing systems are subject to this standard. The permit will require compliance with all applicable standards.
Subpart MM (Chemical Recovery Combustion Sources) establishes MACT standards for control of HAPs from chemical recovery combustion sources which were finalized and published in the Federal Register on January 12, 2001. The new Recovery Furnace, new Lime Kiln, and new Smelt Dissolving Tank are subject to this standard. The permit will require compliance with all applicable requirements.
Subpart DDDDD, Industrial Boilers and Process Heaters. Subpart DDDDD regulated HAP emissions from industrial boilers and process heaters. In March, 2007, the EPA filed a motion to vacate and remand this rule back to the agency. The rule was vacated by court order, subject to appeal, on June 8, 2007. No appeals were made and the rule was vacated on July 30, 2007.

Existing and new small gaseous fuel boilers and process heaters (less than 10 MMBtu/hr heat rating) were not subject to any standards, recordkeeping, or notifications under Subpart DDDDD. EPA is planning on issuing guidance (or a rule) on what actions applicants and permitting authorities should take regarding MACT determinations under either Section112(g) or Section 112(j) for sources that were affected sources under Subpart DDDDD and other vacated MACTs. It is expected that the guidance (or rule) will establish a new timeline for submission of section 112(j) applications for vacated MACT standards. At this time, AQD has determined that a 112(j) determination is not needed for sources potentially subject to a vacated MACT, including Subpart DDDDD. This permit may be reopened to address Section 112(j) when necessary.

Compliance Assurance Monitoring, 40 CFR 64 [Applicable]
Compliance Assurance Monitoring, as published in the Federal Register on October 22, 1997, applies to any pollutant specific emission unit at a major source, that is required to obtain a Title V permit, if it meets all the following criteria:

- It is subject to an emission limit or standard for an applicable regulated air pollutant.
- It uses a control device to achieve compliance with the applicable emission limit or standard.
- It has potential emissions, prior to the control device, of the applicable regulated air pollutant greater than major source levels.

Emission units subject to a standard established after date (1990) are not subject to this regulation. The facility will be required to achieve compliance with Part 64 during the Title V permit process.

Chemical Accident Prevention Provisions, 40 CFR Part 68 [Not Applicable]
This facility does not store any regulated substance above the applicable threshold limits. More information on this federal program is available at the web site: http://www.epa.gov/ceppo/.

Acid Rain, 40 CFR Part 72, 73, 75 and 76 (Permit Requirements) [Not Applicable]
Currently the Valliant Mill does not sell electricity back to the grid. If the mill elects in the future to sell more than 25 MWe of electricity back to the grid, potential applicable requirements will be reviewed.

Stratospheric Ozone Protection, 40 CFR Part 82 [Subpart A and F Applicable]
These standards require phase out of Class I & II substances, reductions of emissions of Class I & II substances to the lowest achievable level in all use sectors, and banning use of nonessential products containing ozone-depleting substances (Subparts A & C); control servicing of motor vehicle air conditioners (Subpart B); require Federal agencies to adopt procurement regulations which meet phase out requirements and which maximize the substitution of safe alternatives to Class I and Class II substances (Subpart D); require warning labels on products made with or containing Class I or II substances (Subpart E); maximize the use of recycling and recovery upon disposal (Subpart F); require producers to identify substitutes for ozone-depleting compounds under the Significant New Alternatives Program (Subpart G); and reduce the emissions of halons (Subpart H).

Subpart A identifies ozone-depleting substances and divides them into two classes. Class I controlled substances are divided into seven groups; the chemicals typically used by the manufacturing industry include carbon tetrachloride (Class I, Group IV) and methyl chloroform (Class I, Group V). A complete phase-out of production of Class I substances is required by January 1, 2000 (January 1, 2002, for methyl chloroform). Class II chemicals, which are hydrochlorofluorocarbons (HCFCs), are generally seen as interim substitutes for Class I CFCs. Class II substances consist of 33 HCFCs. A complete phase-out of Class II substances, scheduled in phases starting by 2002, is required by January 1, 2030.

To the extent that the facility has air-conditioning units/fire systems that apply, the permit requires compliance with Part 82.

SECTION XIII. COMPLIANCE

Tier Classification and Public Review

This application has been determined to be a **Tier II** based on the request for a construction permit for a major source. The applicant published the "Notice of Filing a Tier II Application" in the *McCurtain Gazette*, a daily newspaper of general circulation in McCurtain County, on October 31, 2007. The notice stated that the application was available for public review at the Idabel Public Library, Two SE Avenue "D", Idabel, Oklahoma or at the AQD office. The applicant also publish the "Notice of Draft Tier II Permit" in the *McCurtain Gazette* on March 14, 2008. The notice stated that the application was available for public review at the Idabel Public Library, Two SE Avenue "D", Idabel, Oklahoma or at the AQD office. The facility is located within 50 miles of the borders with the states of Texas and Arkansas; both states were notified of the draft permit. The facility has requested that public and EPA review occur concurrently. DEQ granted this request provided that no comments are received from the public, EPA Region VI, or the states of Texas and Arkansas during the public comment period. No comments were received from the public, EPA Region VI, or the states of Texas and Arkansas.

The applicant has submitted an affidavit that they are not seeking a permit for land use or for any operation upon land owned by others without their knowledge. The affidavit certifies that the land owner (Southeast Oklahoma Industrial Authority) has been notified.

Information on all permit actions is available for review by the public in the Air Quality section of the DEQ Web page:*http://www.deq.state.ok.us/*

Fees Paid

Major source modified construction permit fee of $1,500.

SECTION XIV. SUMMARY

Ambient air quality standards are not threatened at this site. There are no active Air Quality compliance or enforcement issues concerning this facility which would prohibit issuance of this permit. Issuance of the modified construction permit is recommended.

PERMIT TO CONSTRUCT
AIR POLLUTION CONTROL FACILITY
SPECIFIC CONDITIONS

Weyerhaeuser Company **Permit No. 97-057-C (M-9) (PSD)**
Valliant Mill

The permittee is authorized to construct in conformity with the specifications submitted to Air Quality established with Permit No. 97-057-C (M-4 and M-8) and submittal on October 10, 2007. The Evaluation Memorandum dated April 23, 2008, explains the derivation of applicable permit requirements and estimates of emissions; however, it does not contain limitations or permit requirements. Commencing construction or operations under this permit constitutes acceptance of, and consent to, the conditions contained herein:

I. Equipment and Applicable Requirements [OAC 252:100-8-6(a)(1)]

A. EUG FW – Facility-Wide

1. The permittee shall submit a modification to the previously submitted Title V operating permit application within 180 days of start up of each of the CFB Boiler or BFB Boiler, and No. 2 Lime Kiln. Timely submittal was made for the Recovery Furnace project and BART waiver updates on July 26, 2007
[OAC 252-100-8-4(b)(5)]
2. For the emission units authorized under this permit for which a Federal NSPS or NESHAP is applicable, the permittee shall submit the required notifications and/or conduct the required performance testing for the particular emission unit within the timeframes identified in the applicable regulation for that emission unit.
[40 CFR Part 60.7]
3. The project is subject to PSD monitoring for ozone; therefore, the permittee conducted ozone monitoring prior to the commencement of operation of the CFB or BFB Boiler, or No. 2 Lime Kiln as agreed upon with the DEQ. This monitoring will also complete the requirements for post-construction ozone monitoring for Permit No. 97-057-C (PSD) (M-2). [OAC 252-100-8-35]
4. The plant wide fugitive emissions will comply with the following emission limits for all phases. [OAC 252-100-8-6(a)(1)]
   i. All excess NCG emissions will comply with these emission limits and be reported with a point even though the point is not normally an emission point.

Emission Point Plant wide Fugitives	Fugitive TRS TPY [C]	Fugitive VOC TPY [C]
Phase I	23.77	528.89
Phase II	24.50	534.35
Phase IIIA	23.63	499.69
Phase IIIB	23.63	610.94

[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

B. EUG A1 – No. 1 Digester System

1. NCG's from the No. 1 Digester System shall be routed to the Recovery Furnace, CFB/BFB Boiler, Lime Kiln, or Thermal Oxidizer for combustion. [OAC 252-100-8-34]

2. The No. 1 Digester System shall comply with the following regulations (Details in I.-LL. "Table of Federal Regulatory Requirement Citations"):
   a. Federal NSPS, 40 CFR Part 60, Subpart BB (when triggered); and
   b. Federal NESHAP for Source Categories, 40 CFR Part 63, Subpart S.

C. EUG A2 – No. 2 Digester System

1. NCG's from the No. 2 Digester System shall be routed to the Recovery Furnace, CFB/BFB Boiler, Lime Kiln, or Thermal Oxidizer for combustion. [OAC 252-100-8-34]

2. The No. 2 Digester System shall comply with the following regulations (Details in I.-LL. "Table of Federal Regulatory Requirement Citations"):
   a. Federal NSPS, 40 CFR Part 60, Subpart BB (when triggered); and
   b. Federal NESHAP for Source Categories, 40 CFR Part 63, Subpart S.

D. EUG A3 – No. 3 Digester System

1. NCG's from the No. 3 Digester System shall be routed to the Recovery Furnace, CFB/BFB Boiler, Lime Kiln, or Thermal Oxidizer for combustion. [OAC 252-100-8-34]

2. The No. 3 Digester System shall comply with the following regulations (Details in I.-LL. "Table of Federal Regulatory Requirement Citations"):
   c. Federal NSPS, 40 CFR Part 60, Subpart BB (when triggered); and
   d. Federal NESHAP for Source Categories, 40 CFR Part 63, Subpart S

E. EUG A4, A5, & A7 – OCC Plant

1. The OCC Plants shall comply with the following emission limits for all phases. [OAC 252-100-8-6(a)(1)]

Emission Point	**EU Name/Model**	**VOC[A]**	
		lb/hr [B]	**TPY [C]**
E-A4, C	No. 1 OCC Plant	25.06	99.6
A5	No. 2 OCC Plant		
A7	No. 3 OCC Plant		

[A] VOC emissions limitations expressed as methanol.
[B] Weyerhaeuser fiscal month basis, and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Condition I.-E.-1 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month operating rate records and emission factors submitted with the application for this permit.

F. EUG A8 & A8b – OCC Lightweight Rejects Handling System

1. The OCC Lightweight Rejects Handling System shall comply with the following emission limits for all phases-A8; for Phase IIIA or IIIB – A8b.[OAC 252-100-8-6(a)(1)]

Emission Point	EU Name/Model	PM_{10}	
		lb/hr [A]	TPY [B]
E-A8,A	OCC Lightweight Rejects Baghouse	0.46	1.90
E-A8b, A	OCC Ltwt. Rjts. Baghouse New Boiler	0.46	1.90

[A] Weyerhaeuser fiscal month basis, and hours of operation.
[B] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Condition I.-F.-1 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month operating rate records and emission factors submitted with the application for this permit.

G. EUG B1 – No. 1 Brownstock Washing Area

1. The No. 1 Brownstock Washing Area shall comply with the following emission limits for all phases. [OAC 252-100-8-6(a)(1)]

Emission Point	EU Name/Model	VOC [A]		TRS	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
E-B1,B E-B1,C	Brownstock Washer 1A Brownstock Washer 1B	26.57	108.60	0.83	3.37

[A] VOC emissions limitations expressed as 80% a-pinene/20% methanol.
[B] Weyerhaeuser fiscal month basis, and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Condition I.-G.-1 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month operating rate records and emission factors submitted with the application for this permit.

3. The No. 1 Brownstock Washing Area shall comply with the following regulations (Details in I.-LL. "Table of Federal Regulatory Requirement Citations"):
   a. Federal New Source Performance Standard, 40 CFR Part 60, Subpart BB (when triggered); and
   b. Federal NESHAP for Source Categories, 40 CFR Part 63, Subpart S.

H. EUG B2 – No. 2 Brownstock Washing Area

1. The No. 2 Brownstock Washing Area shall comply with the following emission limits for all phases. [OAC 252:100-8-6(a)(1)]

Emission Point	EU Name/Model	VOC [A]		TRS	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
E-B2,A	1st Stage Brownstock Washer	19.19	77.58	0.60	2.41
E-B2,B	2nd Stage Brownstock Washer				

[A] VOC emissions limitations expressed as 80% a-pinene/20% methanol
[B] Weyerhaeuser fiscal month basis, and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Condition I.-H.-1 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month operating rate records and emission factors submitted with the application for this permit.

3. The No. 2 Brownstock Washing Area shall comply with the following regulations (Details in I.-LL. "Table of Federal Regulatory Requirement Citations"):
   a. Federal New Source Performance Standard, 40 CFR Part 60, Subpart BB; and
   b. Federal NESHAP for Source Categories, 40 CFR Part 63, Subpart S.

I. EUG B3 – No. 3 Brownstock Washing Area

1. The No. 3 Brownstock Washing Area shall comply with the following emission limits for all phases. [OAC 252:100-8-6(a)(1)]

Emission Point	EU Name/Model	VOC [A]		TRS	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
B3, A	Brownstock Washer – A Line	14.76	58.18	0.46	1.81
B3, B	Brownstock Washer – A Line				
B3, C	Brownstock Washer – B Line				
B3, D	Brownstock Washer – B Line				

[A] VOC emissions limitations expressed as 80% a-pinene/20% methanol
[B] Weyerhaeuser fiscal month basis, and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Condition I.-I.-1 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month operating rate records and emission factors submitted with the application for this permit.

3. The No. 3 Brownstock Washing Area shall comply with the following regulations (Details in I.-LL. "Table of Federal Regulatory Requirement Citations"):
   a. Federal New Source Performance Standard, 40 CFR Part 60, Subpart BB (when triggered); and
   b. Federal NESHAP for Source Categories, 40 CFR Part 63, Subpart S as part of the Clean Condensate Alternative monitoring and recordkeeping.

J. EUG B4 – No. 4 Brownstock Washing Area

1. NCGs from the No. 4 Brownstock Washer shall be collected and controlled (combusted in the recovery furnace, CFB/BFB boiler, Lime Kiln or NCG Thermal Oxidizer).

2. The No. 4 Brownstock Washing Area shall comply with the following regulations (Details in I.-LL. "Table of Federal Regulatory Requirement Citations"):
   a. Federal New Source Performance Standard, 40 CFR Part 60, Subpart BB; and
   b. Federal NESHAP for Source Categories, 40 CFR Part 63, Subpart S.

K. EUG C1 – No. 1 Paper Machine (Stock Prep)
EUG C2 – No. 1 Paper Machine (Wet End)
EUG C3 – No. 1 Paper Machine (Dry End)

1. The No. 1 Paper Machine shall comply with the following emission limits for all phases.

[OAC 252:100-8-6(a)(1)]

Emission Point	EU Name/Model	PM/PM_{10} [A]		VOC [A]	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
E-C1 E-C2,A	Stock Preparation Fourdrinier	3.6	13.14	310.64	1,133.81
E-C2,B	Vacuum Pumps/ Vacuum Flume				
E-C2,D	Press Section				
E-C3,A	Dryer Section				

[A] VOC emissions limitations expressed as methanol.
[B] Weyerhaeuser fiscal month basis and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Condition I.-K.-1 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month operating rate records and emission factors submitted with the application for this permit.

L. EUG C4 – No. 2 Paper Machine (Stock Prep)
EUG C5 – No. 2 Paper Machine (Wet End)
EUG C6 – No. 2 Paper Machine (Dry End)

1. The No. 2 Paper Machine shall comply with the following emission limits for all phases. [OAC 252-100-8-6(a)(1)]

Emission Point	EU Name/Model	PM/PM_{10} [A]		VOC [A]	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
C4 / E-C5,A	Stock Preparation / Fourdrinier	1.70	6.35	146.69	548.02
E-C5,B	Press Section				
E-C5,D	Vacuum Pumps/ Vacuum Flume				
E-C6,A	Dryer Section				

[A] VOC emissions limitations expressed as methanol.
[B] Weyerhaeuser fiscal month basis, and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Condition I.-L.-1 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month operating rate records and emission factors submitted with the application for this permit.

M. EUG C7 – No. 3 Paper Machine (Stock Prep)
EUG C8 – No. 3 Paper Machine (Wet End)
EUG C9 – No. 3 Paper Machine (Dry End)

1. The No. 3 Paper Machine shall comply with the following emission limits for all phases. [OAC 252-100-8-6(a)(1)]

Emission Point	EU Name/Model	PM/PM_{10} [A]		VOC [A]	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
C7 E-C8,A	Stock Preparation Fourdrinier	1.95	6.57	168.26	566.92
E-C8,B	Press Section				
E-C8,D	Vacuum Pumps/ Vacuum Flume				
E-C9,A	Dryer Section				

[A] VOC emissions limitations expressed as methanol.
[B] Weyerhaeuser fiscal month basis, and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Condition I.-M.-1 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month operating rate records and emission factors.

N. EUG D1 – Bark Boiler

1. The Bark Boiler shall comply with the following emission limits (Phase I, II, and Phase IIIB). [OAC 252-100-8-6(a)(1)]

Emission Point	EU Name/ Model	PM / PM_{10}		CO		SO_2		NO_x	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
D1	Bark Boiler	90.00	306.6	6,626.70	11,399.39	720.00	254.48	270.00	840.08

Emission Point	EU Name/ Model	VOC [A]		Lead		H_2SO_4	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
D1	Bark Boiler	51.17	174.31	0.08	0.29	22.35	76.13

[A] VOC emissions limitations expressed as propane.
[B] Weyerhaeuser fiscal month basis and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. The Bark Boiler shall have no emissions in Phase IIIA. [OAC 252-100-8-6(a)(1)]

3. The Bark Boiler excess emissions of NOx or SO2 that are startup, shutdown, malfunction or maintenance issues are covered by the permitted limits in 1.N.1.

4. The Bark Boiler shall comply with the following regulations (Details in I.-LL. "Table of Federal Regulatory Requirement Citations"):
   a. OAC 252:100, Subchapters 19, 25, 31, and
   b. Federal NSPS, 40 CFR Part 60, Subpart D;
      i. PM_{10} 0.10 lb/MMBtu; SO_2 0.80 lb/MMBtu; NOx 0.30 lb/MMBtu
   c. Federal NESHAP for Specific Pollutants, 40 CFR 61, Subpart E;

5. Determinations of heat input (for determination of compliance with standards on a lb/MMBtu basis) may be determined by ASME Method PTC-4.1 or an equivalent method approved by DEQ.

O. EUG D2 – Power Boiler

1. The Power Boiler shall comply with the following emission limits during Phase I. [OAC 252-100-8-6(a)(1)]

Emission Point	EU Name/ Model	PM / PM_{10}		CO		SO_2		NO_x	
		lb/hr [B]	TPY	lb/hr [B]	TPY	lb/hr [B]	TPY	lb/hr [B]	TPY
Main Stack	Power Boiler	171.00		92.99		1,486.80		1,022.40	
Emission Point	**EU Name/ Model**	**VOC [A]**		**Lead**		**H_2SO_4**			
		lb/hr [B]	**TPY**	**lb/hr [B]**	**TPY**	**lb/hr [B]**	**TPY**		
Main Stack	Power Boiler	7.49		0.02		22.35			

[A] VOC emissions limitations expressed as propane.
[B] Weyerhaeuser fiscal month basis, and hours of operation.

2. The Power Boiler shall comply with the following emission limits during Phase II. [OAC 252-100-8-6(a)(1)]

Emission Point	EU Name/ Model	PM / PM_{10}		CO		SO_2		NO_x	
		lb/hr [B]	TPY	lb/hr [B]	TPY	lb/hr [B]	TPY [C]	lb/hr [B]	TPY
Main Stack	Power Boiler	171.00		92.99		1,486.80		511.20	
Emission Point	**EU Name/ Model**	**VOC [A]**		**Lead**		**H_2SO_4**			
		lb/hr [B]	**TPY**	**lb/hr [B]**	**TPY**	**lb/hr [B]**	**TPY**		
Main Stack	Power Boiler	7.49		0.02		22.35			

[A] VOC emissions limitations expressed as propane.
[B] Weyerhaeuser fiscal month basis, and hours of operation.

3. The Power Boiler shall comply with the following emission limits during Phase IIIA.[OAC 252-100-8

Emission Point	EU Name/ Model	PM / PM_{10}		CO		SO_2		NO_x	
		lb/hr [B]	TPY	lb/hr [B]	TPY	lb/hr [B]	TPY	lb/hr [B]	TPY
Main Stack	Power Boiler	171.00		92.99		1,486.80		255.60	
Emission Point	**EU Name/ Model**	**VOC [A]**		**Lead**		**H_2SO_4**			
		lb/hr [B]	**TPY**	**lb/hr [B]**	**TPY**	**lb/hr [B]**	**TPY**		
Main Stack	Power Boiler	7.49		0.02		22.35			

[A] VOC emissions limitations expressed as propane.
[B] Weyerhaeuser fiscal month basis, and hours of operation.

4. The Power Boiler shall comply with the following emission limits during Phase IIIB. [OAC 252-100-8-6(a)(1)]

Emission Point	EU Name/ Model	PM / PM_{10}		CO		SO_2		NO_x	
		lb/hr [B]	TPY	lb/hr [B]	TPY	lb/hr [B]	TPY	lb/hr [B]	TPY
Main Stack	Power Boiler	171.00		92.99		1,486.80		255.60	
Emission Point	**EU Name/ Model**	**VOC [A]**		**Lead**		**H_2SO_4**			
		lb/hr [B]	**TPY**	**lb/hr [B]**	**TPY**	**lb/hr [B]**	**TPY**		
Main Stack	Power Boiler	7.49		0.02		22.35			

[A] VOC emissions limitations expressed as propane.
[B] Weyerhaeuser fiscal month basis, and hours of operation.

5. Compliance with Specific Condition I.-O shall be demonstrated monthly based on the amount of each fuel fired in the Power Boiler and emission factors. Compliance will be demonstrated by a performance test when pollution control equipment is installed using the test methods and procedures specified in 40 CFR §§60.8 and 63.7 in accordance with 40 CFR §§60.46b and 63.7520. Then continued compliance shall be demonstrated monthly with monthly operating rate records and emission factors developed based on the initial performance test for each type of fuel.

6. The power boiler will have excess opacity emissions occurring twice a month (for a period of up to 30 minutes each) during soot blowing activities, allowing the boiler to operate more efficiently.

P. EUG D5 – CFB Boiler

1. The CFB Boiler shall comply with the following emission limits (Phase IIIA).
[OAC 252-100-8-6(a)(1)]

Emission Point	EU Name/ Model	PM / PM_{10}		CO		SO_2		NO_x	
		lb/hr [B]	TPY	lb/hr [B]	TPY	lb/hr [B]	TPY	lb/hr [B]	TPY
D5	CFB Boiler	96.49		567.60		378.40		283.80	
Emission Point	**EU Name/ Model**	**VOC [A]**		**Lead**		**H_2SO_4**			
		lb/hr [B]	**TPY**	**lb/hr [B]**	**TPY**	**lb/hr [B]**	**TPY**		
D5	CFB Boiler	11.35		0.19		11.35			

[A] VOC emissions limitations expressed as propane.
[B] Weyerhaeuser fiscal month basis and hours of operation.

2. The CFB Boiler shall comply with the following BACT requirements:

Pollutant	Emission Limit	Control Technology
H_2SO_4	0.006 lb/MMBtu (short term) / 0.005 lb/MMBtu (Weyerhaeuser fiscal month average)	Limestone Injection Design
VOC (as propane)	0.006 lb/MMBtu (Weyerhaeuser fiscal month average)	Good Combustion Practices

3. Compliance with Specific Conditions I.-P.-1 and I.-P.-2 shall be demonstrated by an initial performance test using the test methods and procedures specified in 40 CFR §§60.8 and 63.7 in accordance with 40 CFR §§60.46b and 63.7520. Continued compliance with the CO, SO_2, VOC, Lead, and H_2SO_4 limits shall be demonstrated monthly with monthly operating rate records and emission factors developed based on the initial performance test. Continued compliance with the NO_x and PM / PM_{10} limits shall be demonstrated utilizing continuous monitoring systems required by the regulations identified in Specific Condition I.-P.-4. BACT for CO does not apply since only triggers when completing Phase IIIB (BFB Boiler).

4. The CFB Boiler shall comply with the following regulations (Details in I.-LL. “Table of Federal Regulatory Requirement Citations”): :
   a. OAC 252:100, Subchapters 19, 25, 31, and 33
   b. Federal NSPS, 40 CFR Part 60, Subpart Db;
   c. Federal NESHAP for Specific Pollutants, 40 CFR 61, Subpart E;
   d. Federal NESHAP for Source Categories (MACT), 40 CFR Part 63, Subpart S (not an affected source and no applicable emission limitations – control device only).

Q. EUG D5-2 – BFB Boiler

1. The BFB Boiler shall comply with the following emission limits (Phase IIIB).

[OAC 252-100-8-6(a)(1)]

Emission Point	EU Name/ Model	PM / PM_{10}		CO		SO_2		NO_x	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
D5-2	BFB Boiler	120.00	210.24	360.00	1,576.80	240.00	420.48	360.00	1,314.00

Emission Point	EU Name/ Model	VOC [A]		Lead		H_2SO_4	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
D5-2	BFB Boiler	24.00	105.12	0.12	0.53	25.73	112.68

[A] VOC emissions limitations expressed as propane.
[B] Weyerhaeuser fiscal month basis and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. The BFB Boiler shall comply with the following BACT requirements:

Pollutant	Emission Limit	Control Technology
CO	0.3 lb/MMBtu (Weyerhaeuser fiscal month average)	BFB Boiler
H_2SO_4	0.0214 lb/MMBtu	Limestone Injection Design
VOC (as propane)	0.02 lb/MMBtu (Weyerhaeuser fiscal month average)	Good Combustion Practices

3. Compliance with Specific Conditions I.-Q.-1 and I.-Q.-2 shall be demonstrated by an initial performance test using the test methods and procedures specified in 40 CFR §§60.8 and 63.7 in accordance with 40 CFR §§60.46b and 63.7520. Continued compliance with the CO, SO_2, VOC, Lead, and H_2SO_4 limits shall be demonstrated monthly with monthly operating rate records and emission factors developed based on the initial performance test. Continued compliance with the NO_x and PM / PM_{10} limits shall be demonstrated utilizing continuous monitoring systems required by the regulations identified in Specific Condition I.-Q.-4.

4. The BFB Boiler shall comply with the following regulations (Details in I.-LL. "Table of Federal Regulatory Requirement Citations"):
   a. OAC 252:100, Subchapters 19, 25, 31, and 33
   b. Federal NSPS, 40 CFR Part 60, Subpart Db;
   c. Federal NESHAP for Specific Pollutants, 40 CFR 61, Subpart E;
   d. Federal NESHAP for Source Categories (MACT), 40 CFR Part 63, Subpart S (not an affected source and no applicable emission limitations – control device only):

R. EUG D6 – Recovery Furnace

1. The New Recovery Furnace (No. 2) shall comply with the following emission limits in Phase I. [OAC 252:100-8-6(a)(1)]

Emission Point	EU Name/ Model	PM / PM_{10}		CO		SO_2		NO_x	
		lb/hr [B]	TPY	lb/hr [B]	TPY	lb/hr [B]	TPY	lb/hr [B]	TPY
D6	Recovery Furnace	49.07		482.56		1,155.39		657.39	
Emission Point	**EU Name/ Model**	**VOC [A]**		**TRS**		**Lead**		**H_2SO_4**	
		lb/hr [B]	**TPY**	**lb/hr [B]**	**TPY [C]**	**lb/hr [B]**	**TPY**	**lb/hr [B]**	**TPY**
D6	Recovery Furnace	41.25		6.22	20.25	.003		3.06	

[A] VOC emissions limitations expressed as propane.
[B] Weyerhaeuser fiscal month basis and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. The New Recovery Furnace shall comply with the following emission limits in Phase II. [OAC 252:100-8-6(a)(1)]

Emission Point	EU Name/ Model	PM / PM_{10}		CO		SO_2		NO_x	
		lb/hr [B]	TPY	lb/hr [B]	TPY	lb/hr [B]	TPY	lb/hr [B]	TPY
D6	Recovery Furnace	49.07		482.56		1,155.39		657.39	
Emission Point	**EU Name/ Model**	**VOC [A]**		**TRS**		**Lead**		**H_2SO_4**	
		lb/hr [B]	**TPY [C]**	**lb/hr [B]**	**TPY [C]**	**lb/hr [B]**	**TPY**	**lb/hr [B]**	**TPY**
D6	Recovery Furnace	41.25		6.22	24.08	.003		3.06	

[A] VOC emissions limitations expressed as propane.
[B] Weyerhaeuser fiscal month basis and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

3. The New Recovery Furnace shall comply with the following emission limits in Phase IIIA. [OAC 252:100-8-6(a)(1)]

Emission Point	EU Name/ Model	PM / PM_{10}		CO		SO_2		NO_x	
		lb/hr [B]	TPY	lb/hr [B]	TPY	lb/hr [B]	TPY	lb/hr [B]	TPY
D6	Recovery Furnace	49.07		509.87		722.12		657.39	
Emission Point	**EU Name/ Model**	**VOC [A]**		**TRS**		**Lead**		**H_2SO_4**	
		lb/hr [B]	**TPY**	**lb/hr [B]**	**TPY [C]**	**lb/hr [B]**	**TPY**	**lb/hr [B]**	**TPY**
D6	Recovery Furnace	41.25		6.22	24.08	.003		3.06	

[A] VOC emissions limitations expressed as propane.
[B] Weyerhaeuser fiscal month basis and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

4. The Recovery Furnace shall comply with the following emission limits in Phase IIIB.
[OAC 252:100-8-6(a)(1)]

Emission Point	EU Name/ Model	PM / PM_{10}		CO		SO_2		NO_x	
		lb/hr [B]	TPY	lb/hr [B]	TPY	lb/hr [B]	TPY	lb/hr [B]	TPY
D6	Recovery Furnace	49.07		509.87		722.12		657.39	
Emission Point	**EU Name/ Model**	**VOC [A]**		**TRS**		**Lead**		**H_2SO_4**	
		lb/hr [B]	**TPY**	**lb/hr [B]**	**TPY [C]**	**lb/hr [B]**	**TPY**	**lb/hr [B]**	**TPY**
D6	Recovery Furnace	41.25		6.22	24.08	.003		3.06	

[A] VOC emissions limitations expressed as propane.
[B] Weyerhaeuser fiscal month basis and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

5. The Recovery Furnace shall comply with the following BACT requirements.

Pollutant	Emission Limit	Control Technology
CO	300 ppm @ 8% O_2 (Weyerhaeuser fiscal month average)	GCP
H_2SO_4	0.5 ppm @ 8% O_2 (Weyerhaeuser fiscal month average)	GCP / High Solids Firing
VOC (as Propane)	49 ppm @ 8% O_2 (Weyerhaeuser fiscal month average)	Staged Combustion / NDCE

6. Compliance with Specific Conditions I.-R.-1 and I.-R.-2 shall be demonstrated by an initial performance test using the test methods and procedures specified in 40 CFR §§60.8 and 63.7 in accordance with 40 CFR §§60.285 and 63.865. Continued compliance with the $PM / PM_{10,}$ CO, NO_x, VOC, Lead, and H_2SO_4 limits shall be demonstrated monthly with monthly operating rate records and emission factors developed based on the initial performance test. Continued compliance with the TRS and SO_2 limits shall be demonstrated utilizing continuous monitoring systems required by the regulations identified in Specific Condition I -R.-4. The Recovery Furnace shall be subject to the CO BACT requirement only if Project IIIB (BFB Boiler) is completed.

7. The Recovery Furnace shall comply with the following regulations (Details in I.-LL. "Table of Federal Regulatory Requirement Citations"):
   a. OAC 252:100, Subchapters 19, 31, and 33;
   b. Federal NSPS, 40 CFR Part 60, Subpart BB;
   c. Federal NESHAP for Source Categories, 40 CFR Part 63, Subpart MM; and
   d. Federal NESHAP for Source Categories (MACT), 40 CFR Part 63, Subpart S (not an affected source and no applicable emission limitations – control device only).

8. Natural gas firing from the new recovery furnace shall be limited to a maximum annual capacity factor of ten percent (10%) of the unit's heat input capacity utilizing the Annual Capacity Factor of NSPS Subpart Db until the permittee elects to lift the limit and comply with all requirements of Db.
[40CFR §60.41b, 40 CFR §60.46b(d)],

9. Gases from the Smelt Dissolving Tanks shall be routed to the New Recovery Furnace as combustion air or vented through the emergency bypass. All excess emissions associated with the emergency bypass are covered by the emission limits for the New Recovery Furnace.

EUG D2, D5 D6 Summary

1. The Power Boiler, Recovery Furnace and CFB or BFB shall comply with the following combined Sum 12 month rolling total ton per year emission limits.

[OAC 252:100-8-6(a)(1)]

EU Name / Emission Pt.	**Phase I TPY**						
	PM/ PM10	**CO**	**SO2**	**NOx**	**VOC [B]**	**Lead**	**H_2SO_4**
Power Boiler / Main Stack	508.47	263.34	6,512.20	3,040.14	21.22	0.07	66.45
New Recovery / Recovery Furn Stack	159.80	270.52	627.17	915.85	115.69	.009	9.97
Sum TPY [A]:	**668.3**	**533.9**	**7,139.4**	**3,956.0**	**136.9**	**0.079**	**76.4**

[A]January 2008 starts the beginning of the 12 month rolling average with the first annual total in December of 2008. The 12 month rolling average shall be calculated based upon Weyerhaeuser's fiscal calendar.

[B]VOC emissions limitations expressed as propane

EU Name / Emission Pt.	**Phase II TPY**						
	PM/ PM10	**CO**	**SO2**	**NOx**	**VOC [B]**	**Lead**	**H_2SO_4**
Power Boiler / Main Stack	665.76	344.79	6,512.20	1,990.27	27.79	0.09	87.01
New Recovery / Recovery Furn Stack	190.11	506.90	746.11	1,581.81	152.41	.0105	11.86
Sum TPY [A]:	**855.9**	**851.7**	**7,258.3**	**3,572.1**	**180.2**	**0.101**	**98.9**

[A]January 2008 starts the beginning of the 12 month rolling average with the first annual total in December of 2008. The 12 month rolling average shall be calculated based upon Weyerhaeuser's fiscal calendar.

[B]VOC emissions limitations expressed as propane

EU Name / Emission Pt.	Phase IIIA TPY						
	PM/ PM10	CO	SO2	NOx	VOC [B]	Lead	H_2SO_4
Power Boiler / Main Stack	665.76	344.79	1,220.00	995.14	27.79	0.09	87.01
New Recovery / Recovery Furn Stack	190.11	657.56	746.11	1,926.23	162.75	0.0105	11.86
CFB Boiler / D5	207.17	2,486.09	953.00	828.70	49.72	0.80	41.43
Sum TPY [A]:	**1,063.0**	**3,488.4**	**2,919.1**	**3,750.1**	**240.3**	**0.901**	**140.3**

[A]January 2008 starts the beginning of the 12 month rolling average with the first annual total in December of 2008. The 12 month rolling average shall be calculated based upon Weyerhaeuser’s fiscal calendar.
[B]VOC emissions limitations expressed as propane

EU Name / Emission Pt.	Phase IIIB TPY						
	PM/ PM10	CO	SO2	NOx	VOC [B]	Lead	H_2SO_4
Power Boiler / Main Stack	457.71	237.05	1,750.00	684.16	19.10	0.06	59.82
New Recovery / Recovery Furn Stack	190.11	482.98	746.11	1,461.89	148.81	0.0105	11.86
BFB Boiler / D5-2	210.24	1,576.80	420.48	1,314.00	105.12	0.53	112.68
Sum TPY [A]:	**858.1**	**2,296.8**	**2,916.6**	**3,460.1**	**273.0**	**0.601**	**184.4**

[A]January 2008 starts the beginning of the 12 month rolling average with the first annual total in December of 2008. The 12 month rolling average shall be calculated based upon Weyerhaeuser’s fiscal calendar.
[B]VOC emissions limitations expressed as propane

S. EUG E1 – Turpentine Recovery System

1. NCG’s from the Turpentine System shall be routed to the Recovery Furnace, CFB/BFB Boiler, Lime Kiln, or Thermal Oxidizer for combustion.

2. The Turpentine Recovery System shall comply with the following regulations (Details in I.-LL. “Table of Federal Regulatory Requirement Citations”):
   a. Federal NSPS, 40 CFR Part 60, Subpart BB; and
   b. Federal NESHAP for Source Categories, 40 CFR Part 63, Subpart S.

T. EUG E2a – Spent Liquor Concentration

1. NCG's from the Spent Liquor Concentration shall be routed to the Recovery Furnace, CFB/BFB Boiler, Lime Kiln, or Thermal Oxidizer for combustion.

2. The Spent Liquor Concentration is a multiple effect evaporator system and shall comply with the following regulations (Details in I.-LL. "Table of Federal Regulatory Requirement Citations"):
   a. Federal NSPS, 40 CFR Part 60, Subpart BB; and
   b. Federal NESHAP for Source Categories, 40 CFR Part 63, Subpart S

U. EUG E2b – Evaporator Sump

1. The Evaporator Sump shall comply with the following emission limits for all phases. [OAC 252:100-8-6(a)(1)]

Emission Point	EU Name/Model	VOC [A]		TRS	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
E2b	Evaporator Sump	52.63	213.01	16.07	65.05

[A] VOC emissions limitations expressed as methanol.
[B] Weyerhaeuser fiscal month basis and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Conditions I.-U.-1 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month operating rate records and emission factors submitted with the application for this permit.

V. EUG E3d – Spent Liquor Mix Tanks

1. The Spent Liquor Mix Tanks vent through the New Recovery Furnace.

W. EUG E4b – Smelt Dissolving Tank

1. Gases from the Smelt Dissolving Tanks shall be routed to the Recovery Furnace as combustion air or vented through the emergency bypass.

2. The Smelt Dissolving Tank shall comply with the following regulations:
   a. OAC 252:100, Subchapters 19, 31, and 33;
   b. Federal NSPS, 40 CFR Part 60, Subpart BB; and
   c. Federal NESHAP for Source Categories, 40 CFR Part 63, Subpart MM.

X. EUG E5 – Lime Slakers

1. The Lime Slakers shall comply with the following emission limits for all phases. [OAC 252:100-8-6(a)(1)]

Emission Point	EU Name/Model	PM / PM_{10}		TRS		VOC [A]	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
E-E5,A	Lime Slaker Vent #1	0.12	0.39	0.17	0.55	66.74	219.27
E-E5,B	Lime Slaker Vent #2						

[A] VOC emissions limitations expressed as methanol.
[B] Weyerhaeuser fiscal month basis and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Conditions I.X.1 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month operating rate records and emission factors.

Y. EUG E6 – Causticizing System

1. The Causticizing System shall comply with the following emission limits for all phases. [OAC 252:100-8-6(a)(1)]

Emission Point	EU Name/Model	VOC [A]		TRS	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
E6 (2 stacks)	No. 1a Causticizer	61.88	203.29	0.17	0.55
	No. 2 Causticizer				
	No. 1b Causticizer				
	No. 3 Causticizer				

[A] VOC emissions limitations expressed as methanol.
[B] Weyerhaeuser fiscal month basis and hours of operation..
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Condition I.-Y.-1 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month operating rate records and emission factors submitted with the application for this permit.

Z. EUG E7a – Lime Kiln System (Total)

1. The No. 1 Lime Kiln shall comply with the following emission limits during Phase I. [OAC 252:100-8-6(a)(1)]

Emission Point	EU Name/ Model	PM / PM_{10}		CO		SO_2		NO_x	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
E7a	No. 1 Lime Kiln	1.93	5.37	36.30	101.07	14.64	40.72	50.40	140.18
Emission Point	**EU Name/ Model**	**VOC [A]**		**TRS**		**Lead**		**H_2SO_4**	
		lb/hr [B]	**TPY [C]**	**lb/hr [B]**	**TPY [C]**	**lb/hr [B]**	**TPY [C]**	**lb/hr [B]**	**TPY [C]**
E7a	No. 1 Lime Kiln	12.00	33.39	2.40	6.68	0.11	0.32	0.50	1.39

[A] VOC emissions limitations expressed as propane.
[B] Weyerhaeuser fiscal month basis and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. The No. 1 Lime Kiln may be used as a back-up control device for the control of emissions as specified in federal NSPS, 40 CFR 60, Subpart BB, and federal NESHAP for Source Categories, 40 CFR 63, Subpart S. The SO2, TRS, and NOx emission limitations in I.Z.1. above for the Lime Kiln do not apply when the Lime Kiln is used as a backup control device for the destruction of non-condensable gases (NCGs) and stripper off-gases (SOGs). [Permit No. 96-043-C (M-5) (PSD)]

   a. When used as a back-up control device for the control of emissions as specified in federal NSPS, 40 CFR 60, Subpart BB, the Lime Kiln shall combust the gases at a minimum temperature of 650 degrees C (1200 degrees F) for at least 0.5 seconds.

      i. The permittee shall demonstrate compliance with this requirement by operating a continuous monitoring system to measure and record the combustion temperature, when the Lime Kiln is used as a back-up control device for the control of emissions as specified in federal NSPS, 40 CFR 60, Subpart BB.

      ii. Engineering equations shall be used to calculate residence time. These calculations shall be made available to regulatory personnel upon request.

   b. When used as a back-up control device for the control of emissions as specified in federal NESHAP for source Categories, 40 CFR 63, Subpart S, and the Lime Kiln shall comply with all applicable requirements.

3. The No. 1 Lime Kiln (upon modification) shall comply with the following emission limits during Phase II. [OAC 252:100-8-6(a)(1)]

Emission Point	EU Name/ Model	PM / PM_{10}		CO		SO_2		NO_x	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
E7a	No. 1 Lime Kiln	1.93	8.04	36.34	151.21	14.64	60.92	50.40	209.71
Emission Point	**EU Name/ Model**	**VOC [A]**		**TRS**		**Lead**		**H_2SO_4**	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
E7a	No. 1 Lime Kiln	9.76	40.61	2.40	9.99	0.11	0.47	0.40	1.66

[A] VOC emissions limitations expressed as propane.
[B] Weyerhaeuser fiscal month basis and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

With the following total emission limits when burning SOG/NCGs in the Lime Kiln during Phase II:

Emission Point	EU Name/ Model	PM / PM_{10}		CO		SO_2		NO_x	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
E7a	No. 1 Lime Kiln	9.47	30.07	36.65	152.10	14.65	60.96	85.59	312.47
Emission Point	**EU Name/ Model**	**VOC [A]**		**TRS**		**Lead**		**H_2SO_4**	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
E7a	No. 1 Lime Kiln	9.77	40.63	2.44	10.12	0.11	0.47	1.12	3.75

[A] VOC emissions limitations expressed as propane
[B] Weyerhaeuser fiscal month basis and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

4. The No. 1 Lime Kiln may be used full time to burn SOGs/NCGs in Phase II.

5. The Lime Kiln System combined total emissions from the modified existing lime kiln (No.1) and/or the new lime kiln (No.2) shall comply with the following emission limits during Phases IIIA or IIIB. [OAC 252:100-8-6(a)(1)]

Emission Point	EU Name/ Model	PM / PM_{10}		CO		SO_2		NO_x	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
E7a/b	Lime Kiln System	2.07	8.61	36.34	151.21	14.64	60.92	72.00	299.59
Emission Point	**EU Name/ Model**	**VOC [A]**		**TRS**		**Lead**		**H_2SO_4**	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
E7a/b	Lime Kiln System	9.76	40.61	2.40	9.99	0.11	0.47	0.40	1.66

[A] VOC emissions limitations expressed as propane.
[B] Weyerhaeuser fiscal month basis and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

With the following total emission limits when burning SOG/NCGs in the Lime Kiln during Phase IIIA or IIIB:

Emission Point	EU Name/ Model	PM / PM_{10}		CO		SO_2		NO_x	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
E7a/b	Total Kiln System	9.61	30.64	36.65	152.10	14.65	60.96	107.19	402.35
Emission Point	**EU Name/ Model**	**VOC [A]**		**TRS**		**Lead**		**H_2SO_4**	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
E7a/b	Total Kiln System	9.77	40.63	2.44	10.12	0.11	0.47	1.12	3.75

[A] VOC emissions limitations expressed as propane
[B] Weyerhaeuser fiscal month basis and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

6. The Lime Kiln System may be used full time to burn SOGs/NCGs in Phase IIIA or IIIB.

7. The existing modified or newly installed Lime Kiln shall comply with the following BACT requirements when applicable.

Pollutant	Emission Limit	Control Technology
CO	0.2 lb/MMBtu (Weyerhaeuser fiscal month average)	GCP
H_2SO_4	0.002 lb/MMBtu (Weyerhaeuser fiscal month average)	Lime Kiln (Inherent Scrubbing)
VOC (as propane)	0.0488 lb/MMBtu (Weyerhaeuser fiscal month average)	Good Combustion Practices

8. Compliance with Specific Conditions I.-V.-1 and I.-V.-2 shall be demonstrated by an initial performance test using the test methods and procedures specified in 40 CFR §§60.8 and 63.7 in accordance with 40 CFR §§60.285 and 63.865. Continued compliance with the PM / $PM_{10,}$ CO, NO_x, VOC, Lead, and H_2SO_4 limits shall be demonstrated monthly with monthly operating rate records and emission factors developed based on the initial performance test. Continued compliance with the TRS and SO_2 limits shall be demonstrated utilizing continuous monitoring systems required by the regulations identified in Specific Condition I.-V.-4. Compliance with CO BACT only applies when Phase IIIB (BFB Boiler) is constructed.

9. The modified/new Lime Kiln shall comply with the following regulations (Details in I.-LL. "Table of Federal Regulatory Requirement Citations"):
   a. OAC 252:100, Subchapters 19, 31, and 33;
   b. Federal NSPS, 40 CFR Part 60, Subpart BB; and
   c. Federal MACT, 40 CFR Part 63, Subpart MM.

AA. EUG E8 – Tall Oil Plant

1. The Tall Oil Plant shall comply with the following emission limits for all phases.
[OAC 252:100-8-6(a)(1)]

Emission Point	EU Name/Model	VOC [A]		TRS	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
Main Stack	Tall Oil Plant	84.56	370.39	0.36	1.56

[A] VOC emissions limitations expressed as methanol
[B] Weyerhaeuser fiscal month basis and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Conditions I.-AA.-1 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month operating rate records and emission factors submitted with the application for this permit.

BB. EUG F1 – Woodyard

1. The Woodyard shall comply with the following emission limits.
[OAC 252:100-8-6(a)(1)]

Emission Point	EU Name/Model	PM		PM_{10}		VOC [A]	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
F1	Woodyard	5.44	4.70	2.70	2.28	0.33	1.44

[A] VOC emissions limitations expressed as alpha-pinene.
[B] Weyerhaeuser fiscal month basis and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Conditions I.-BB.-1 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month operating rate records and emission factors submitted with the application for this permit.

CC. EUG F1b – Coal Material Handling

1. These emission units are considered insignificant because their emissions are less than 5 TPY.

Emission Point	EU Name/Model	Construction /Modification
--	Coal Material Storage Piles	2008 (Planned)
--	Coal Material Stacking	2008 (Planned)
--	Coal Material Reclaiming	2008 (Planned)

2. The permittee shall keep records to verify insignificance.

DD. EUG F3a – Wastewater Treatment System

1. The Wastewater Treatment System shall comply with the following emission limits for all phases. [OAC 252:100-8-6(a)(1)]

Emission Point	EU Name/Model	VOC [A]		TRS	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
F3a	Wastewater Treatment System	312.57	1,264.98	27.30	126.80

[A] VOC emissions limitations expressed as methanol.
[B] Weyerhaeuser fiscal month basis and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Condition I.-DD.-1 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month operating rate records and emission factors submitted with the application for this permit.

EE. EUG F4a – NCG Collection and Thermal Oxidation System – LVHC
EUG F4b – NCG Collection and Thermal Oxidation System – HVLC

1. NCG's from the NCG LVHC and HVLC Collection System shall be routed to the Recovery Furnace, Lime Kiln, CFB or BFB Boiler or Thermal Oxidizer for combustion.

2. The NCG Thermal Oxidizer may be used as a back-up unit for the control and combustion of NCGs and SOGs for periods when the Recovery Furnace, and/or CFB/BFB Boiler is not in operation. During periods of back-up operation of the NCG Thermal Oxidizer, the sum of the annual emissions from the NCG Thermal Oxidizer, Recovery Furnace, and CFB/BFB Boiler shall not exceed the sum of the annual emission limits specified in Specific Conditions I.P.1 (CFB) (or BFB Specific Conditions I.Q.1) and I.R.1-4 (Rec. Furn. Phase specific).

   Prior to the operation of the CFB/BFB Boiler, the NCG Thermal Oxidizer shall be used as a back-up unit for the control and combustion of NCGs and SOGs for periods when the Recovery Furnace is not in operation. During these periods of back-up operation of the NCG Thermal Oxidizer, the sum of the annual emissions from the NCG Thermal Oxidizer and Recovery Furnace shall not exceed the annual emission limits specified in Specific Conditions I.R.1-4 (Rec. Furn.-Phase specific); the Thermal Oxidizer lb/hr emissions shall not exceed previously permitted (No. 99-134-C) emission limits specified for the Thermal Oxidizer.

Emission Point	EU Name/ Model	PM / PM_{10} lb/hr [B]	CO lb/hr [B]	SO_2 lb/hr [B]	NO_x lb/hr [B]
F4	Thermal Oxidizer	7.6	0.4	41.5	91.1

Emission Point	EU Name/ Model	VOC [A] lb/hr [B]	TRS lb/hr [B]
F4	Thermal Oxidizer	0.7	0.5

[A] VOC emissions limitations expressed as propane.
[B] Weyerhaeuser fiscal month basis and hours of operation.

3. The Thermal Oxidizer shall comply with the following regulations (Details in I.-LL. "Table of Federal Regulatory Requirement Citations"):
   a. OAC 252:100, Subchapters 19, 31, and 33;
   b. Federal NSPS, 40 CFR Part 60, Subpart BB; and
   c. Federal MACT, 40 CFR Part 63, Subpart S.

4. Compliance with Specific Condition I.-EE.-1 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month operating rate records and emission factors submitted with the application for this permit.

FF. EUG F5 – Landfill Operations

1. Landfill Operations shall comply with the following emission limits.

[OAC 252:100-8-6(a)(1)]

Emission Point	EU Name/Model	PM		PM_{10}	
		lb/hr [A]	TPY [B]	lb/hr [A]	TPY [B]
F5	Landfill Operations	15.84	4.11	7.58	1.95

[A] Weyerhaeuser fiscal month basis and hours of operation.
[B] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Condition I.-FF.-1 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month operating rate records and emission factors submitted with the application for this permit.

GG. EUG F7/F9 – Chip Thickness Screening and Conditioning System

1. The Chip Thickness Screening and Conditioning System shall comply with the following emission limits. [OAC 252-100-8-6(a)(1)]

Emission Point	EU Name/Model	VOC [A]		PM		PM_{10}	
		lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]	lb/hr [B]	TPY [C]
F7/F9	Bar Screen Chip Conditioner Air Density Separator #1 Air Density Separator #2 Air Density Separator #3	4.73	19.11	2.10	8.60	1.26	5.16

[A] VOC emissions limitations expressed as alpha-pinene.
[B] Weyerhaeuser fiscal month basis and hours of operation.
[C] 12-month rolling total based on Weyerhaeuser fiscal calendar month.

2. Compliance with Specific Condition I.-GG.-1 shall be demonstrated monthly based on Weyerhaeuser fiscal calendar month on operating rate records and emission factors submitted with the application for this permit.

HH. EUG F10 – Steam Stripper System

1. SOG's from the Steam Stripper System shall be routed to the Recovery Furnace, Lime Kiln, CFB or BFB Boiler or Thermal Oxidizer for combustion.

2. The Steam Stripper System shall comply with the following regulations (Details in I.-LL. "Table of Federal Regulatory Requirement Citations"):
   a. Federal NSPS, 40 CFR Part 60, Subpart BB; and
   b. Federal NESHAP for Source Categories, 40 CFR Part 63, Subpart S.

II. EUG F13 – Petcoke Silo Bin Vents

1. These emission units are considered insignificant because their emissions are less than 5 TPY. [OAC 252:100-8-6(a)(1)]

Emission Point	EU Name/Model	Construction / Modification Date
F13	Petcoke Silo Bin Vent No. 1	2005
F14	Petcoke Silo Bin Vent No. 2	2008 (Planned)

2. The permittee shall keep records to verify insignificance.

JJ. Accommodated Emissions

For this modification, the permittee shall document and maintain a record of the information required by OAC 252:100-8-36.2(c)(1)(A) through (C). The permittee shall monitor the emissions of any regulated NSR pollutant that could increase as a result of this modification and that is emitted by any emissions unit identified; and calculate and maintain a record of the annual emissions, in TPY on a calendar year basis, for a period of 5 years following resumption of regular operations after the modification, or for a period of 10 years following resumption of regular operations after the modification if it increases the design capacity of the affected emissions unit. The permittee shall submit a report to the Director if the annual emissions, in TPY, from the modification, exceed the baseline actual emissions (as documented and maintained by an amount that is significant for that regulated NSR pollutant, and if such emissions differ from the preconstruction projection. The report shall be submitted to the AQD within 60 days after the end of the in which the exceedance or difference occurred. The report shall contain the information required by OAC 252:100-8-36.2(c)(5)(A) through (C). If the permittee materially fails to comply with these provisions, then the calendar year emissions are presumed to equal the source's potential to emit. [OAC 252:100-8-36.2(c)]

KK. Records

The permittee shall maintain records of operations as listed below. These records shall be maintained on-site or at a local field office for at least five years after the date of recording and shall be provided to regulatory personnel upon request. Pound per hour data will be based on the Weyerhaeuser fiscal month basis, and hours of operation. The 12-month rolling total data will be based on the Weyerhaeuser fiscal calendar month, and hours of operation with tracking to begin one year from permit issuance.

[OAC 252:100-8-6 (a)(3)(B)]

a. The OCC Plants (EUG A4, A5, & A7) operating rate as a monthly basis.
b. The OCC Lightweight Rejects Handling System (E-A8,A) operating rate as a monthly basis.
c. The No. 1 Brownstock Washing Area (E-B1,B & E-B1,C) operating rate as a monthly basis.
d. The No. 2 Brownstock Washing Area (E-B2,A & E-B2,B) operating rate as a monthly basis.
e. The No. 3 Brownstock Washing Area (E-B3,A & E-B3,B) operating rate as a monthly basis.
f. The No. 1 Paper Machine (C1, E –C2,A, E –C2,B, E –C2,D, & E –C3,A) operating rate as a monthly basis.
g. The No. 2 Paper Machine (C4, E –C5,A, E –C5,B, E –C5,D, & E –C6,A) operating rate as a monthly basis.
h. The No. 3 Paper Machine (C7, E –C8,A, E –C8,B, E –C8,D, & E –C9,A) operating rate as a monthly basis.
i. The Power Boiler (E-D2) operating rate as a monthly basis.

j. The CFB Boiler (E-D5) operating rate as a monthly basis or the BFB Boiler (E-D5-2) operating rate as a monthly basis.
k. The Recovery Furnace (E-D6) operating rate as a monthly basis .
l. The Lime Slakers (E-E5,A & E-E5,B) operating rate as a monthly basis.
m. The Causticizing System (E-E6) operating rate as a monthly basis.
n. The No. 1 Lime Kiln (E-E7a) operating rate as a monthly basis.
o. The No. 2 Lime Kiln (E-E7b) operating rate as a monthly basis (as applicable).
p. The Tall Oil (E-E8) operating rate as a monthly basis.
q. The Woodyard (E-F1) operating rate as a monthly basis.
r. Insignificance activity (E-F1b) from coal material handling.
s. The Evaporator Sump (E-F3a) operating rate as a monthly basis.
t. The Wastewater Treatment System (E-F3a) operating rate as a monthly basis.
u. The NCG Thermal Oxidizer (E-F4) operating rate as a monthly basis.
v. Landfill Operations (E-F5) operating rate as a monthly basis.
w. The Chip Thickness Screening (E-F7 & E-F9) operating rate as a monthly basis.
x. The Petcoke Silo Bin Vent No. 1 (E-F13) operating rate as a monthly basis.
y. The Petcoke Silo Bin Vent No. 2 (E-F14) operating rate as a monthly basis.

LL. Testing

Any applicable emissions testing requirements shall follow USEPA methods unless otherwise approved by Air Quality. [OAC 252:100-8-6(a)]

MM. Table of Federal Regulatory Requirement Citations

EUG:	Applicable Regs	Unit	Emission limitations:	Monitoring:	Recordkeeping Requirements:	Reporting Requirements:	Test Methods & Procedures	Applicable Parts of the General Provisions:
FW	Part 82, Subpart B, F & H	Facility-Wide						
A1	Subpart S	No. 1 Digester System - Existing Kraft Digester	63.443 and 63.446 and 63.450	63.453	63.454	63.455	63.457	40 CFR 63 Subpart S Table 1
A1	Subpart BB, Applicable but not triggered.	No. 1 Digester System - Existing Kraft Digester	None					
A2	Subpart S	No. 2 Digester System - Existing Kraft Digester	63.443 and 63.446 and 63.450	63.453	63.454	63.455	63.457	40 CFR 63 Subpart S Table 1
A2	Subpart BB, Applicable but not triggered.	No. 2 Digester System - Existing Kraft Digester	None					
A3	Subpart S	No. 3 Digester System - Existing Semi-Chemical Digester	63.443 and 63.450	63.453	63.454			
A3	Subpart BB, Applicable but not triggered.	No. 3 Digester System - Existing Semi-Chemical Digester	None					
A4, A5, & A7		OCC Plants	None					
A6		Makedown Pulper	None					
A8		OCC Lightweight Rejects Handling System	None					
B1	Subpart S	No. 1 Brownstock Washing Area	63.447	63.453	63.454	63.447 & 63.455	63.457	40 CFR 63 Subpart S Table 1

Table of Federal Regulatory Requirement Citations Continued

EUG	Applicable Regs	Unit	Emission limitations:	Monitoring	Recordkeeping Requirements	Reporting Requirements	Test Methods & Procedures	Applicable Parts of the General Provisions
B1	Subpart BB, Applicable but not triggered.	No. 1 Brownstock Washing Area	None					
B2	Subpart BB,	No. 2 Brownstock Washing Area	60.283	60.284				
B2	Subpart S	No. 2 Brownstock Washing Area	63.447	63.453	63.454	63.447 & 63.455	63.457	40 CFR 63 Subpart S Table 1
B3	Subpart BB, Applicable but not triggered.	No. 3 Brownstock Washing Area	None					
B3	Subpart S	No. 3 Brownstock Washing Area	None – Clean Condensate Alternative	63.453	63.454			
C1		No. 1 Paper Machine (Stock Prep)	None					
C2		No. 1 Paper Machine (Wet End)	None					
C3		No. 1 Paper Machine (Wet End)	None					
C4		No. 2 Paper Machine (Stock Prep)	None					
C5		No. 2 Paper Machine (Wet End)	None					
C6		No. 2 Paper Machine (Dry End)	None					
C7		No. 3 Paper Machine (Stock Prep)	None					

Table of Federal Regulatory Requirement Citations Continued

EUG	Applicable Regs	Unit	Emission limitations	Monitoring:	Recordkeeping Requirements	Reporting Requirements	Test Methods & Procedures	Applicable Parts of the General Provisions
C8		No. 3 Paper Machine (Wet End)	None					
C9		No. 3 Paper Machine (Dry End)	None					
D1	Subpart S (Applicable when used as back-up control device, but not triggered)	Bark Boiler	None					
D1	Subpart D	Bark Boiler	60.43 & 60.44	60.45		60.45	60.46	
D1	Subpart E	Bark Boiler	61.52	61.54 & 61.55	61.54	61.534		
D2		Power Boiler	None					
D3		210 MMBtu/hr Package Boiler	None					
E1	Subpart S	Turpentine Recovery System	63.443 & 63.450	63.453	63.454	63.455	63.457	40 CFR 63 Subpart S Table 1
E1	Subpart BB	Turpentine Recovery System	60.283	see lime kiln & NCG thermal oxidizer				
E2a	Subpart S	Spent Liquor Concentration	63.443 & 63.450	63.453	63.454	63.455	63.457	40 CFR 63 Subpart S Table 1
E2a	Subpart BB	Spent Liquor Concentration	60.283	see lime kiln & NCG thermal oxidizer				
E2b		Evaporator Sewer Sump	None					
E3a		Spent Liquor Mix Tanks	Decommissioned					
E3d		New Spent Liquor Mix Tanks	None Note: Emissions are routed to the New Recovery Furnace					

Table of Federal Regulatory Requirement Citations Continued

EUG	Applicable Regulations	Unit	Emission limitations	Monitoring	Recordkeeping Requirements	Reporting Requirements	Test Methods & Procedures	Applicable Parts of the General Provisions
E3b		Recovery Furnace	Unit Decommissioned					
E3c	Subpart MM	New Recovery Furnace	63.862 & 63.864	63.864	63.866	63.867	63.865	40 CFR 63 MM Table 1
E3c	Subpart S	New Recovery Furnace	63.443	63.453 (m, n, & o)	40 CFR 63 S	40 CFR 63 S	40 CFR 63 S	40 CFR 63 S
E3c	Subpart BB	New Recovery Furnace	60.282 & 60.283	60.284	60.284	60.284	60.284 & 60.285	40 CFR 60 BB
E3c	Subpart Db	New Recovery Furnace	60.44 (e)	40 CFR 60 Db	60.49 (d,o,p)	60.49 (q)	40 CFR 60 Db	40 CFR 60 Db
E4	Subpart MM	Smelt Dissolving Tanks	Units Decommissioned					
E4b	Subpart MM	New Smelt Dissolving Tank	Applicable. However, no direct emissions from the SDT (except SSM/excess emissions). The SDT is vented to the recovery furnace.					63.866 (a,b,c)
E4b	Subpart BB	New Smelt Dissolving Tank	Applicable. However, no direct emissions from the SDT (except SSM/excess emissions). The SDT is vented to the recovery furnace.					40 CFR 60 BB
E5		Lime Slakers	None					
E6		Causticizing System	None					
E7	Subpart MM	Lime Kiln	63.862 & 63.864	63.864	63.866	63.867	63.865	40 CFR 63 MM Table 1
E7	Subpart S (when used as a back-up control device)	Lime Kiln	63.443 and 63.450	63.453	63.454	63.455	63.457	40 CFR 63 Subpart S Table 1
E7	Subpart BB (when used as a back-up control device) – applicable – due to backup	Lime Kiln	60.283	60.284		60.284	60.285	

	device but not because of any modification							
E8		Tall Oil Plant	None					
E9		Organic Liquid Storage Vessels	None					

Table of Federal Regulatory Requirement Citations Continued

EUG	Applicable Regs	Unit	Emission limitations	Monitoring	Recordkeeping Requirements	Reporting Requirements	Test Methods & Procedures	Applicable Parts of the General Provisions
E10		Small Volatile Organic Liquid Storage Tanks	None					
F1		Woodyard	None					
F2		FacilityTraffic	None					
F3		Wastewater Treatment System	None					
F4a	Subpart S	NCG Collection and Thermal Oxidation System – LVHC	63.443 and 63.450	63.453	63.454	63.455	63.457	40 CFR 63 Subpart S Table 1
F4a	Subpart BB	NCG Collection and Thermal Oxidation System – LVHC	60.283	60.284		60.284	60.285	
F4b	Subpart S	NCG Collection and Thermal Oxidation System – HVLC	63.443 and 63.450	63.453	63.454	63.455	63.457	40 CFR 63 Subpart S Table 1
F4b	Subpart BB	NCG Collection and Thermal Oxidation System – HVLC	60.283	60.284		60.284	60.285	
F5		Landfill Operations	None					
F6		Diesel Stormwater Pump	None					
F7 & F9		Chip Thickness Screening and Conditioning System	None					
F10	Subpart S	Steam Stripper System	63.443, 63.446 & 63.450	63.453	63.454	63.455	63.457	40 CFR 63 Subpart S Table 1

Table of Federal Regulatory Requirement Citations Continued

EUG	Applicable Regs	Unit	Emission limitations	Monitoring	Recordkeeping Requirements	Reporting Requirements	Test Methods & Procedures	Applicable Parts of the General Provisions
F10	Subpart BB (applic– steam stripper prjt)	Steam Stripper System	60.283	see lime kiln & NCG thermal oxidizer				
Fll		Misc. Insignificant Activities	None					
F13		Petcoke Silo Bin Vent No. 1	None					

MAJOR SOURCE AIR QUALITY PERMIT
STANDARD CONDITIONS
(January 24, 2008)

SECTION I. DUTY TO COMPLY

A. This is a permit to operate / construct this specific facility in accordance with the federal Clean Air Act (42 U.S.C. 7401, et al.) and under the authority of the Oklahoma Clean Air Act and the rules promulgated there under. [Oklahoma Clean Air Act, 27A O.S. § 2-5-112]

B. The issuing Authority for the permit is the Air Quality Division (AQD) of the Oklahoma Department of Environmental Quality (DEQ). The permit does not relieve the holder of the obligation to comply with other applicable federal, state, or local statutes, regulations, rules, or ordinances. [Oklahoma Clean Air Act, 27A O.S. § 2-5-112]

C. The permittee shall comply with all conditions of this permit. Any permit noncompliance shall constitute a violation of the Oklahoma Clean Air Act and shall be grounds for enforcement action, permit termination, revocation and reissuance, or modification, or for denial of a permit renewal application. All terms and conditions are enforceable by the DEQ, by the Environmental Protection Agency (EPA), and by citizens under section 304 of the Federal Clean Air Act (excluding state-only requirements). This permit is valid for operations only at the specific location listed.
[40 C.F.R. §70.6(b), OAC 252:100-8-1.3 and OAC 252:100-8-6(a)(7)(A) and (b)(1)]

D. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit. However, nothing in this paragraph shall be construed as precluding consideration of a need to halt or reduce activity as a mitigating factor in assessing penalties for noncompliance if the health, safety, or environmental impacts of halting or reducing operations would be more serious than the impacts of continuing operations. [OAC 252:100-8-6(a)(7)(B)]

SECTION II. REPORTING OF DEVIATIONS FROM PERMIT TERMS

A. Any exceedance resulting from an emergency and/or posing an imminent and substantial danger to public health, safety, or the environment shall be reported in accordance with Section XIV (Emergencies). [OAC 252:100-8-6(a)(3)(C)(iii)(I) & (II)]

B. Deviations that result in emissions exceeding those allowed in this permit shall be reported consistent with the requirements of OAC 252:100-9, Excess Emission Reporting Requirements.
[OAC 252:100-8-6(a)(3)(C)(iv)]

C. Every written report submitted under this section shall be certified as required by Section III (Monitoring, Testing, Recordkeeping & Reporting), Paragraph F.
[OAC 252:100-8-6(a)(3)(C)(iv)]

SECTION III. MONITORING, TESTING, RECORDKEEPING & REPORTING

A. The permittee shall keep records as specified in this permit. These records, including monitoring data and necessary support information, shall be retained on-site or at a nearby field office for a period of at least five years from the date of the monitoring sample, measurement, report, or application, and shall be made available for inspection by regulatory personnel upon request. Support information includes all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Where appropriate, the permit may specify that records may be maintained in computerized form.

[OAC 252:100-8-6 (a)(3)(B)(ii), OAC 252:100-8-6(c)(1), and OAC 252:100-8-6(c)(2)(B)]

B. Records of required monitoring shall include:

(1) the date, place and time of sampling or measurement;
(2) the date or dates analyses were performed;
(3) the company or entity which performed the analyses;
(4) the analytical techniques or methods used;
(5) the results of such analyses; and
(6) the operating conditions existing at the time of sampling or measurement.

[OAC 252:100-8-6(a)(3)(B)(i)]

C. No later than 30 days after each six (6) month period, after the date of the issuance of the original Part 70 operating permit, the permittee shall submit to AQD a report of the results of any required monitoring. All instances of deviations from permit requirements since the previous report shall be clearly identified in the report. Submission of these periodic reports will satisfy any reporting requirement of Paragraph E below that is duplicative of the periodic reports, if so noted on the submitted report. [OAC 252:100-8-6(a)(3)(C)(i) and (ii)]

D. If any testing shows emissions in excess of limitations specified in this permit, the owner or operator shall comply with the provisions of Section II (Reporting Of Deviations From Permit Terms) of these standard conditions.

[OAC 252:100-8-6(a)(3)(C)(iii)]

E. In addition to any monitoring, recordkeeping or reporting requirement specified in this permit, monitoring and reporting may be required under the provisions of OAC 252:100-43, Testing, Monitoring, and Recordkeeping, or as required by any provision of the Federal Clean Air Act or Oklahoma Clean Air Act. [OAC 252:100-43]

F. Any document submitted in accordance with this permit shall be certified by a responsible official. This certification shall be signed by a responsible official, and shall contain the following language: "I certify, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete." However, an exceedance report that must be submitted within ten days of the exceedance under Section II (Reporting Of Deviations From Permit Terms) or Section XIV (Emergencies) may be submitted without a certification, if an appropriate certification is provided within ten days thereafter, together with any corrected or supplemental information required concerning the exceedance.

[OAC 252:100-8-5(f), OAC 252:100-8-6(a)(3)(C)(iv), OAC 252:100-8-6(c)(1) and OAC 252:100-9-3.1(c)]

G. Any owner or operator subject to the provisions of New Source Performance Standards ("NSPS") under 40 CFR Part 60 or National Emission Standards for Hazardous Air Pollutants ("NESHAPs") under 40 CFR Parts 61 and 63 shall maintain a file of all measurements and other information required by the applicable general provisions and subpart(s). These records shall be maintained in a permanent file suitable for inspection, shall be retained for a period of at least five years as required by Paragraph A of this Section, and shall include records of the occurrence and duration of any start-up, shutdown, or malfunction in the operation of an affected facility, any malfunction of the air pollution control equipment; and any periods during which a continuous monitoring system or monitoring device is inoperative.
[40 C.F.R. §§60.7 and 63.10, 40 CFR Parts 61, Subpart A, and OAC 252:100, Appendix Q]

H. [Reserved]

I. The permittee of a facility that is operating subject to a schedule of compliance shall submit to the DEQ a progress report at least semi-annually. The progress reports shall contain dates for achieving the activities, milestones or compliance required in the schedule of compliance and the dates when such activities, milestones or compliance was achieved. The progress reports shall also contain an explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted. [OAC 252:100-8-6(c)(4)]

J. All testing must be conducted under the direction of qualified personnel by methods approved by the Division Director. All tests shall be made and the results calculated in accordance with standard test procedures. The use of alternative test procedures must be approved by EPA. When a portable analyzer is used to measure emissions it shall be setup, calibrated, and operated in accordance with the manufacturer's instructions and in accordance with a protocol meeting the requirements of the "AQD Portable Analyzer Guidance" document or an equivalent method approved by Air Quality.
[OAC 252:100-8-6(a)(3)(A)(iv), and OAC 252:100-43]

K. The reporting of total particulate matter emissions as required in Part 7 of OAC 252:100-8 (Permits for Part 70 Sources), OAC 252:100-19 (Control of Emission of Particulate Matter), and OAC 252:100-5 (Emission Inventory), shall be conducted in accordance with applicable testing or calculation procedures, modified to include back-half condensables, for the concentration of particulate matter less than 10 microns in diameter (PM_{10}). NSPS may allow reporting of only particulate matter emissions caught in the filter (obtained using Reference Method 5).

L. The permittee shall submit to the AQD a copy of all reports submitted to the EPA as required by 40 C.F.R. Part 60, 61, and 63, for all equipment constructed or operated under this permit subject to such standards. [OAC 252:100-8-6(c)(1) and OAC 252:100, Appendix Q]

SECTION IV. COMPLIANCE CERTIFICATIONS

A. No later than 30 days after each anniversary date of the issuance of the original Part 70 operating permit, the permittee shall submit to the AQD, with a copy to the US EPA, Region 6, a certification of compliance with the terms and conditions of this permit and of any other applicable requirements which have become effective since the issuance of this permit. The compliance certification shall also include such other facts as the permitting authority may require to determine the compliance status of the source.

[OAC 252:100-8-6(c)(5)(A), (C)(v), and (D)]

B. The compliance certification shall describe the operating permit term or condition that is the basis of the certification; the current compliance status; whether compliance was continuous or intermittent; the methods used for determining compliance, currently and over the reporting period; and a statement that the facility will continue to comply with all applicable requirements.

[OAC 252:100-8-6(c)(5)(C)(i)-(iv)]

C. The compliance certification shall contain a certification by a responsible official as to the results of the required monitoring. This certification shall be signed by a responsible official, and shall contain the following language: "I certify, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete."

[OAC 252:100-8-5(f) and OAC 252:100-8-6(c)(1)]

D. Any facility reporting noncompliance shall submit a schedule of compliance for emissions units or stationary sources that are not in compliance with all applicable requirements. This schedule shall include a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with any applicable requirements for which the emissions unit or stationary source is in noncompliance. This compliance schedule shall resemble and be at least as stringent as that contained in any judicial consent decree or administrative order to which the emissions unit or stationary source is subject. Any such schedule of compliance shall be supplemental to, and shall not sanction noncompliance with, the applicable requirements on which it is based, except that a compliance plan shall not be required for any noncompliance condition which is corrected within 24 hours of discovery.

[OAC 252:100-8-5(e)(8)(B) and OAC 252:100-8-6(c)(3)]

SECTION V. REQUIREMENTS THAT BECOME APPLICABLE DURING THE PERMIT TERM

The permittee shall comply with any additional requirements that become effective during the permit term and that are applicable to the facility. Compliance with all new requirements shall be certified in the next annual certification. [OAC 252:100-8-6(c)(6)]

SECTION VI. PERMIT SHIELD

A. Compliance with the terms and conditions of this permit (including terms and conditions established for alternate operating scenarios, emissions trading, and emissions averaging, but excluding terms and conditions for which the permit shield is expressly prohibited under OAC 252:100-8) shall be deemed compliance with the applicable requirements identified and included in this permit. [OAC 252:100-8-6(d)(1)]

B. Those requirements that are applicable are listed in the Standard Conditions and the Specific Conditions of this permit. Those requirements that the applicant requested be determined as not applicable are summarized in the Specific Conditions of this permit. [OAC 252:100-8-6(d)(2)]

SECTION VII. ANNUAL EMISSIONS INVENTORY & FEE PAYMENT

The permittee shall file with the AQD an annual emission inventory and shall pay annual fees based on emissions inventories. The methods used to calculate emissions for inventory purposes shall be based on the best available information accepted by AQD.
[OAC 252:100-5-2.1, OAC 252:100-5-2.2, and OAC 252:100-8-6(a)(8)]

SECTION VIII. TERM OF PERMIT

A. Unless specified otherwise, the term of an operating permit shall be five years from the date of issuance. [OAC 252:100-8-6(a)(2)(A)]

B. A source's right to operate shall terminate upon the expiration of its permit unless a timely and complete renewal application has been submitted at least 180 days before the date of expiration. [OAC 252:100-8-7.1(d)(1)]

C. A duly issued construction permit or authorization to construct or modify will terminate and become null and void (unless extended as provided in OAC 252:100-8-1.4(b)) if the construction is not commenced within 18 months after the date the permit or authorization was issued, or if work is suspended for more than 18 months after it is commenced. [OAC 252:100-8-1.4(a)]

D. The recipient of a construction permit shall apply for a permit to operate (or modified operating permit) within 180 days following the first day of operation. [OAC 252:100-8-4(b)(5)]

SECTION IX. SEVERABILITY

The provisions of this permit are severable and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.
[OAC 252:100-8-6 (a)(6)]

SECTION X. PROPERTY RIGHTS

A. This permit does not convey any property rights of any sort, or any exclusive privilege.
[OAC 252:100-8-6(a)(7)(D)]

B. This permit shall not be considered in any manner affecting the title of the premises upon which the equipment is located and does not release the permittee from any liability for damage to persons or property caused by or resulting from the maintenance or operation of the equipment for which the permit is issued. [OAC 252:100-8-6(c)(6)]

SECTION XI. DUTY TO PROVIDE INFORMATION

A. The permittee shall furnish to the DEQ, upon receipt of a written request and within sixty (60) days of the request unless the DEQ specifies another time period, any information that the DEQ may request to determine whether cause exists for modifying, reopening, revoking,

reissuing, terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the DEQ copies of records required to be kept by the permit.
[OAC 252:100-8-6(a)(7)(E)]

B. The permittee may make a claim of confidentiality for any information or records submitted pursuant to 27A O.S. § 2-5-105(18). Confidential information shall be clearly labeled as such and shall be separable from the main body of the document such as in an attachment.
[OAC 252:100-8-6(a)(7)(E)]

C. Notification to the AQD of the sale or transfer of ownership of this facility is required and shall be made in writing within thirty (30) days after such sale or transfer.
[Oklahoma Clean Air Act, 27A O.S. § 2-5-112(G)]

SECTION XII. REOPENING, MODIFICATION & REVOCATION

A. The permit may be modified, revoked, reopened and reissued, or terminated for cause. Except as provided for minor permit modifications, the filing of a request by the permittee for a permit modification, revocation and reissuance, termination, notification of planned changes, or anticipated noncompliance does not stay any permit condition.
[OAC 252:100-8-6(a)(7)(C) and OAC 252:100-8-7.2(b)]

B. The DEQ will reopen and revise or revoke this permit prior to the expiration date in the following circumstances:

(1) Additional requirements under the Clean Air Act become applicable to a major source category three or more years prior to the expiration date of this permit. No such reopening is required if the effective date of the requirement is later than the expiration date of this permit.
(2) The DEQ or the EPA determines that this permit contains a material mistake or that the permit must be revised or revoked to assure compliance with the applicable requirements.
(3) The DEQ or the EPA determines that inaccurate information was used in establishing the emission standards, limitations, or other conditions of this permit. The DEQ may revoke and not reissue this permit if it determines that the permittee has submitted false or misleading information to the DEQ.
(4) DEQ determines that the permit should be amended under the discretionary reopening provisions of OAC 252:100-8-7.3(b).

[OAC 252:100-8-7.3 and OAC 252:100-8-7.4(a)(2)]

C. The permit may be reopened for cause by EPA, pursuant to the provisions of OAC 100-8-7.3(d). [OAC 100-8-7.3(d)]

D. The permittee shall notify AQD before making changes other than those described in Section XVIII (Operational Flexibility), those qualifying for administrative permit amendments, or those defined as an Insignificant Activity (Section XVI) or Trivial Activity (Section XVII). The notification should include any changes which may alter the status of a “grandfathered source,” as defined under AQD rules. Such changes may require a permit modification.
[OAC 252:100-8-7.2(b) and OAC 252:100-5-1.1]

E. Activities that will result in air emissions that exceed the trivial/insignificant levels and that are not specifically approved by this permit are prohibited. [OAC 252:100-8-6(c)(6)]

SECTION XIII. INSPECTION & ENTRY

A. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow authorized regulatory officials to perform the following (subject to the permittee's right to seek confidential treatment pursuant to 27A O.S. Supp. 1998, § 2-5-105(18) for confidential information submitted to or obtained by the DEQ under this section):

(1) enter upon the permittee's premises during reasonable/normal working hours where a source is located or emissions-related activity is conducted, or where records must be kept under the conditions of the permit;
(2) have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;
(3) inspect, at reasonable times and using reasonable safety practices, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and
(4) as authorized by the Oklahoma Clean Air Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit.

[OAC 252:100-8-6(c)(2)]

SECTION XIV. EMERGENCIES

A. Any exceedance resulting from an emergency shall be reported to AQD promptly but no later than 4:30 p.m. on the next working day after the permittee first becomes aware of the exceedance. This notice shall contain a description of the emergency, the probable cause of the exceedance, any steps taken to mitigate emissions, and corrective actions taken.

[OAC 252:100-8-6 (a)(3)(C)(iii)(I) and (IV)]

B. Any exceedance that poses an imminent and substantial danger to public health, safety, or the environment shall be reported to AQD as soon as is practicable; but under no circumstance shall notification be more than 24 hours after the exceedance.

[OAC 252:100-8-6(a)(3)(C)(iii)(II)]

C. An "emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under this permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation, or operator error. [OAC 252:100-8-2]

D. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that:

(1) an emergency occurred and the permittee can identify the cause or causes of the emergency;
(2) the permitted facility was at the time being properly operated;
(3) during the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit.

[OAC 252:100-8-6 (e)(2)]

E. In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency shall have the burden of proof. [OAC 252:100-8-6(e)(3)]

F. Every written report or document submitted under this section shall be certified as required by Section III (Monitoring, Testing, Recordkeeping & Reporting), Paragraph F.

[OAC 252:100-8-6(a)(3)(C)(iv)]

SECTION XV. RISK MANAGEMENT PLAN

The permittee, if subject to the provision of Section 112(r) of the Clean Air Act, shall develop and register with the appropriate agency a risk management plan by June 20, 1999, or the applicable effective date. [OAC 252:100-8-6(a)(4)]

SECTION XVI. INSIGNIFICANT ACTIVITIES

Except as otherwise prohibited or limited by this permit, the permittee is hereby authorized to operate individual emissions units that are either on the list in Appendix I to OAC Title 252, Chapter 100, or whose actual calendar year emissions do not exceed any of the limits below. Any activity to which a State or Federal applicable requirement applies is not insignificant even if it meets the criteria below or is included on the insignificant activities list.

(1) 5 tons per year of any one criteria pollutant.
(2) 2 tons per year for any one hazardous air pollutant (HAP) or 5 tons per year for an aggregate of two or more HAP's, or 20 percent of any threshold less than 10 tons per year for single HAP that the EPA may establish by rule.

[OAC 252:100-8-2 and OAC 252:100, Appendix I]

SECTION XVII. TRIVIAL ACTIVITIES

Except as otherwise prohibited or limited by this permit, the permittee is hereby authorized to operate any individual or combination of air emissions units that are considered inconsequential and are on the list in Appendix J. Any activity to which a State or Federal applicable requirement applies is not trivial even if included on the trivial activities list.

[OAC 252:100-8-2 and OAC 252:100, Appendix J]

SECTION XVIII. OPERATIONAL FLEXIBILITY

A. A facility may implement any operating scenario allowed for in its Part 70 permit without the need for any permit revision or any notification to the DEQ (unless specified otherwise in the permit). When an operating scenario is changed, the permittee shall record in a log at the facility the scenario under which it is operating. [OAC 252:100-8-6(a)(10) and (f)(1)]

B. The permittee may make changes within the facility that:

(1) result in no net emissions increases,
(2) are not modifications under any provision of Title I of the federal Clean Air Act, and
(3) do not cause any hourly or annual permitted emission rate of any existing emissions unit to be exceeded;

provided that the facility provides the EPA and the DEQ with written notification as required below in advance of the proposed changes, which shall be a minimum of seven (7) days, or twenty four (24) hours for emergencies as defined in OAC 252:100-8-6 (e). The permittee, the DEQ, and the EPA shall attach each such notice to their copy of the permit. For each such change, the written notification required above shall include a brief description of the change within the permitted facility, the date on which the change will occur, any change in emissions, and any permit term or condition that is no longer applicable as a result of the change. The permit shield provided by this permit does not apply to any change made pursuant to this paragraph.

[OAC 252:100-8-6(f)(2)]

SECTION XIX. OTHER APPLICABLE & STATE-ONLY REQUIREMENTS

A. The following applicable requirements and state-only requirements apply to the facility unless elsewhere covered by a more restrictive requirement:

(1) Open burning of refuse and other combustible material is prohibited except as authorized in the specific examples and under the conditions listed in the Open Burning Subchapter. [OAC 252:100-13]
(2) No particulate emissions from any fuel-burning equipment with a rated heat input of 10 MMBTUH or less shall exceed 0.6 lb/MMBTU. [OAC 252:100-19]

(3) For all emissions units not subject to an opacity limit promulgated under 40 C.F.R., Part 60, NSPS, no discharge of greater than 20% opacity is allowed except for:
  (a) Short-term occurrences which consist of not more than one six-minute period in any consecutive 60 minutes, not to exceed three such periods in any consecutive 24 hours. In no case shall the average of any six-minute period exceed 60% opacity;
  (b) Smoke resulting from fires covered by the exceptions outlined in OAC 252:100-13-7;
  (c) An emission, where the presence of uncombined water is the only reason for failure to meet the requirements of OAC 252:100-25-3(a); or
  (d) Smoke generated due to a malfunction in a facility, when the source of the fuel producing the smoke is not under the direct and immediate control of the facility and the immediate constriction of the fuel flow at the facility would produce a hazard to life and/or property.

[OAC 252:100-25]
(4) No visible fugitive dust emissions shall be discharged beyond the property line on which the emissions originate in such a manner as to damage or to interfere with the use of

adjacent properties, or cause air quality standards to be exceeded, or interfere with the maintenance of air quality standards. [OAC 252:100-29]

(5) No sulfur oxide emissions from new gas-fired fuel-burning equipment shall exceed 0.2 lb/MMBTU. No existing source shall exceed the listed ambient air standards for sulfur dioxide. [OAC 252:100-31]

(6) Volatile Organic Compound (VOC) storage tanks built after December 28, 1974, and with a capacity of 400 gallons or more storing a liquid with a vapor pressure of 1.5 psia or greater under actual conditions shall be equipped with a permanent submerged fill pipe or with a vapor-recovery system. [OAC 252:100-37-15(b)]

(7) All fuel-burning equipment shall at all times be properly operated and maintained in a manner that will minimize emissions of VOCs. [OAC 252:100-37-36]

SECTION XX. STRATOSPHERIC OZONE PROTECTION

A. The permittee shall comply with the following standards for production and consumption of ozone-depleting substances:

(1) Persons producing, importing, or placing an order for production or importation of certain class I and class II substances, HCFC-22, or HCFC-141b shall be subject to the requirements of §82.4;
(2) Producers, importers, exporters, purchasers, and persons who transform or destroy certain class I and class II substances, HCFC-22, or HCFC-141b are subject to the recordkeeping requirements at §82.13; and
(3) Class I substances (listed at Appendix A to Subpart A) include certain CFCs, Halons, HBFCs, carbon tetrachloride, trichloroethane (methyl chloroform), and bromomethane (Methyl Bromide). Class II substances (listed at Appendix B to Subpart A) include HCFCs.

[40 CFR 82, Subpart A]

B. If the permittee performs a service on motor (fleet) vehicles when this service involves an ozone-depleting substance refrigerant (or regulated substitute substance) in the motor vehicle air conditioner (MVAC), the permittee is subject to all applicable requirements. Note: The term “motor vehicle” as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term “MVAC” as used in Subpart B does not include the air-tight sealed refrigeration system used as refrigerated cargo, or the system used on passenger buses using HCFC-22 refrigerant. [40 CFR 82, Subpart B]

C. The permittee shall comply with the following standards for recycling and emissions reduction except as provided for MVACs in Subpart B:

(1) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to § 82.156;
(2) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to § 82.158;

(3) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to § 82.161;
(4) Persons disposing of small appliances, MVACs, and MVAC-like appliances must comply with record-keeping requirements pursuant to § 82.166;
(5) Persons owning commercial or industrial process refrigeration equipment must comply with leak repair requirements pursuant to § 82.158; and
(6) Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to § 82.166.

[40 CFR 82, Subpart F]

SECTION XXI. TITLE V APPROVAL LANGUAGE

A. DEQ wishes to reduce the time and work associated with permit review and, wherever it is not inconsistent with Federal requirements, to provide for incorporation of requirements established through construction permitting into the Source's Title V permit without causing redundant review. Requirements from construction permits may be incorporated into the Title V permit through the administrative amendment process set forth in OAC 252:100-8-7.2(a) only if the following procedures are followed:

(1) The construction permit goes out for a 30-day public notice and comment using the procedures set forth in 40 C.F.R. § 70.7(h)(1). This public notice shall include notice to the public that this permit is subject to EPA review, EPA objection, and petition to EPA, as provided by 40 C.F.R. § 70.8; that the requirements of the construction permit will be incorporated into the Title V permit through the administrative amendment process; that the public will not receive another opportunity to provide comments when the requirements are incorporated into the Title V permit; and that EPA review, EPA objection, and petitions to EPA will not be available to the public when requirements from the construction permit are incorporated into the Title V permit.
(2) A copy of the construction permit application is sent to EPA, as provided by 40 CFR § 70.8(a)(1).
(3) A copy of the draft construction permit is sent to any affected State, as provided by 40 C.F.R. § 70.8(b).
(4) A copy of the proposed construction permit is sent to EPA for a 45-day review period as provided by 40 C.F.R.§ 70.8(a) and (c).
(5) The DEQ complies with 40 C.F.R. § 70.8(c) upon the written receipt within the 45-day comment period of any EPA objection to the construction permit. The DEQ shall not issue the permit until EPA's objections are resolved to the satisfaction of EPA.
(6) The DEQ complies with 40 C.F.R. § 70.8(d).
(7) A copy of the final construction permit is sent to EPA as provided by 40 CFR § 70.8(a).
(8) The DEQ shall not issue the proposed construction permit until any affected State and EPA have had an opportunity to review the proposed permit, as provided by these permit conditions.
(9) Any requirements of the construction permit may be reopened for cause after incorporation into the Title V permit by the administrative amendment process, by DEQ as provided in OAC 252:100-8-7.3(a), (b), and (c), and by EPA as provided in 40 C.F.R. § 70.7(f) and (g).

(10) The DEQ shall not issue the administrative permit amendment if performance tests fail to demonstrate that the source is operating in substantial compliance with all permit requirements.

B. To the extent that these conditions are not followed, the Title V permit must go through the Title V review process.

SECTION XXII. CREDIBLE EVIDENCE

For the purpose of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any provision of the Oklahoma implementation plan, nothing shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.

[OAC 252:100-43-6]

Weyerhaeuser Company
Attn: Kathryn Crenwelge
Highway 70 West P.O. Box 890
Valliant, Oklahoma 74764

SUBJECT: Permit Number: **97-057-C (M-9) PSD**
Facility: Valliant Paper Mill
Location: Secs. 26, 27, 28, 33 and 34-T6S-R21E, McCurtain County
Permit Writer: Dale Becker

Dear Ms. Crenwelge:

Enclosed is the permit authorizing operation of the referenced facility. Please note that this permit is issued subject to standard and specific conditions, which are attached. These conditions must be carefully followed since they define the limits of the permit and will be confirmed by periodic inspections.

Also note that you are required to annually submit an emissions inventory for this facility. An emissions inventory must be completed on approved AQD forms and submitted (hardcopy or electronically) by April 1st of every year. Any questions concerning the form or submittal process should be referred to the Emissions Inventory Staff at 405-702-4100.

Thank you for your cooperation. If you have any questions, please refer to the permit number above and contact me at (405) 702-4213.

Sincerely,

L. Dale Becker, P.E.
New Source Permits Section
AIR QUALITY DIVISION

Enclosures

PERMIT

AIR QUALITY DIVISION
STATE OF OKLAHOMA
DEPARTMENT OF ENVIRONMENTAL QUALITY
707 N. ROBINSON STREET, SUITE 4100
P.O. BOX 1677
OKLAHOMA CITY, OKLAHOMA 73101-1677

Permit No. 97-057-C (M-9)

Weyerhaeuser Company,

having complied with the requirements of the law, is hereby granted permission to construct a Kraft Process paper mill at Valliant, McCurtain County, Oklahoma, subject to standard conditions dated January 24, 2008, and specific conditions, both attached.

Division Director, Air Quality Division | **Issuance Date**

DEQ Form # 100-890