Pre-Construction Review

and

Preliminary Determination

of Approval for

Weyerhaeuser NR Company, Philadelphia Facility

Facility No. 1920-00012

Technical Review

by

Mr. Jaricus Whitlock

Air Quality Analysis

By

Mr. Pleasant J McNeel IV

August 28, 2018

# General Information

Weyerhaeuser NR Company – Philadelphia Facility (i.e. “*Weyerhaeuser*”), located at 1016 Weyerhaeuser Road in Philadelphia, Mississippi 39350-6505, [(601) 650-7200] has submitted a complete air permit application requesting a modification of the Prevention of Significant Deterioration (PSD) Construction Permit initially issued on March 17, 2005 and modified on May 22, 2008 and February 13, 2009. Currently, green lumber processing within the sawmill area is limited to 260,000,000 board feet per year (or 260 MMBF per year), and dried lumber throughput within the two (2) continuous direct-fired drying kilns (CDKs) is limited to 245 MMBF per year. Through the proposed modification, Weyerhaeuser requests the aforementioned limits be removed and replaced with a common limit of 275 MMBF per year.

The MDEQ received the PSD Construction Permit Application on October 18, 2017, which included a process description, emissions calculations, a Best Available Control Technology (BACT) Analysis, and a Source Impact Analysis. Moreover, this project will result in the emission of volatile organic compounds (VOCs) at a rate that exceeds the significant emissions rate for Ozone in Mississippi PSD Regulation, 11 Miss. Admin. Code, Pt. 2, Ch. 5, which adopt by reference the United States Environmental Protection Agency’s (USEPA) PSD regulations found in 40 CFR § 52.21.

# Project Description

Weyerhaeuser is requesting that the current limits placed on green lumber processing (set at 260 MMBF per year via a PSD Construction Permit issued on March 17, 2005) and kiln lumber drying capacity (set at 245 MMBF per year via an Air Construction Permit issued on September 26, 2014) be increased to the common limit of 275 MMBF per year. No physical modifications will be made to the facility to accommodate the request. However, the proposed increase of each production limit will consequently result in an increased annual throughput for all air pollution control equipment directly associated with the sawmill area: the Fuel House – Green Fiber Cyclone (Emission Point AA-033); the Green Chip Truck Bin Cyclone (Emission Point AA-034); the CDK-5 Fuel Bin Cyclone (Emission Point AA-040); the CDK-6 Fuel Bin Cyclone (Emission Point AA-041).

The proposed production limit increase will modify the respective operational parameters that are currently in place for the sawmill area and the CDKs. Therefore, the sawmill area and the CDKs (Emission Points AA-038 and AA-039) are considered “*modified units*”. Additionally, because the increased annual throughput for the aforementioned control equipment (i.e. cyclones) originates from the modification of an upstream unit (i.e. the sawmill area), these specific emission sources are considered “*affected units*” for this project.

Based on correspondence submitted by Weyerhaeuser (received on July 11, 2018) regarding to the Planer Trim Hog Cyclone (Emission Point AA-031) and the Primary Planer Shavings Cyclone (Emission Point) AA-032 , it was determined that these specific cyclones only have short-term (i.e. pounds per hour) PM / PM10 emission limits, which were established in the Air Construction Permit issued on March 21, 2014 and modified on April 3, 2017. As no long-term (i.e. tons per year) emission limits currently exist for these cyclones, no actual change will occur as a result of the proposed modification. Moreover, dried lumber production from the CDKs restricts the throughput within the planer mill area (and the corresponding cyclones). Therefore, while considered “*affected units*” as it pertains to the project, Emission Points AA-031 and AA-032 will not be included in the modified PSD Construction Permit.

On August 13, 2018, correspondence from Weyerhaeuser was received requesting the removal of the respective short-term and long-term PM / PM10 emission limits established for the Fuel House – Green Fiber Cyclone (Emission Point AA-033) and the Green Chip Truck Bin Cyclone (Emission Point AA-034) by a PSD Construction Permit issued in 1995. Weyerhaeuser outlined the initial incorporation of these specific limits stemmed from addressing facility-wide PM emissions, as the facility possessed a plywood mill, a sawmill area, a planer mill area, and steam-heated lumber drying kilns with wood-fired boilers. Since that time, the facility has shut down the plywood mill and the collective steam-heated lumber drying kilns / wood-fired boilers (replacing the latter with the CDKs). Consequently, facility-wide PM / PM10 potential emissions were significantly decreased. Furthermore, the denoted cyclones are utilized by Weyerhaeuser as pneumatic conveyance systems rather than air pollution control equipment for sawmill-generated by-products (i.e. bark; sawdust; etc.) conveyed to the CDK fuel silos. Based on the provided information, the respective PM / PM10 emission limits for the denoted emission points have been permanently removed.

**Table 1. PSD Applicability**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pollutant** | **Project-Related Increases**  **(TPY)** | **Significant Emission Rate**  **(TPY)** | **Netting Analysis Required?**  **(Yes/No)** | **Contemporaneous Emissions**  **(TPY)** | **Total Net Emissions**  **(TPY)** | **PSD Review Required?**  **(Yes/No)** |
| PM | 92.70 | 25 | Yes | 351.02 | -258.33 | No |
| PM10 | 56.86 | 151 | Yes | 274.87 | -218.01 | No |
| PM2.5 | 38.04 | 10 | Yes | 163.62 | -125.58 | No |
| NOX1,2 | 15.28 | 40 | No | 120.27 | -104.99 | No |
| SO21 | 7.67 | 40 | No | 13.67 | -6.00 | No |
| VOC2 | 656.21 | 40 | Yes | 529.64 | 126.57 | Yes |
| CO | 103.26 | 100 | Yes | 328.02 | -224.76 | No |

**1** As of April 28, 2011, both NOx and SO2 are precursors for PM2.5 with a significant emission rate of 40 TPY each. If the NOx and/or SO2 precursor emissions are greater than or equal to the respective SERs of 40 tpy, the permit applicant should assess the potential impact of the significant precursor emissions from the project source.

2 Both NOx and VOC are considered precursors for ozone with a significant emission rate of 40 TPY each.

# Best Available Control Technology (BACT) Analysis

Weyerhaeuser is required to perform a BACT analysis for all pollutants that have a significant net emissions increase. Utilizing the “top-down” approach detailed in EPA’s *New Source Review Workshop Manual* (Draft 1990), the PSD applicant goes through a five step process to determine BACT: (1) Identify all control technologies; (2) Eliminate technically infeasible control options; (3) Rank the remaining control technologies by control effectiveness; (4) Evaluate the most effective controls taking into consideration economic, energy, and environmental impacts; and (5) Select BACT. BACT is an emission limitation based on the maximum degree of pollutant reduction determined on a case-by-case basis, taking into account energy, environmental, and economic impacts, that is determined to be achievable for a source. A BACT analysis must be performed for each new and modified emission unit that emits any of the pollutants exceeding the significant emissions rate. As the proposed permit modification results in an increase of VOC emissions above the significant emission rate for a major modification, the modified units mentioned in the “**Project Description**” are subject to a BACT review for VOCs. Described below is the BACT analysis for the proposed modification:

## VOC Analysis

VOCs are emitted from the CDKs as a result of naturally occurring organic compounds found in the green lumber source (traditionally a softwood) volatilizing in the presence of saturated steam. After entering the gaseous phase, the integrated VOC / steam mixture exits the CDKs via door openings on either end of the unit and vents located on the roof.

* Step 1 – IDENTIFY ALL Control Technologies

***Combustion***: Essentially all VOCs will burn; hence combustion is the technique most universally applicable to reducing VOC emissions. Gases containing organics are usually burned if they have little recovery value or contain contaminants that make recovery unprofitable. Combustion devices include thermal incinerators, catalytic incinerators, boilers, and process heaters.

Incinerators destroy pollutants through thermal or catalytic oxidation and control efficiencies should be at least 98%. Pollutant streams not capable of sustaining combustion may require additional fuel. Fuel cost can be at least partially offset by employing various methods of heat recovery. In addition, some pollutant streams can be directly vented into a process boiler’s flame, thus reducing energy costs for the boiler and alleviating the need (or cost) of an add-on control device.

Incineration has been successfully applied to aluminum chip dryers, petroleum processing and marketing operations, animal blood dryers, automotive brake-shoe debonding ovens, citrus pulp dryers, coffee roasters, wire enameling ovens, foundry core ovens, meat smokehouses, paint baking ovens, varnish cookers, paper printing and impregnating installations, pharmaceutical manufacturing plants, sewage disposal plants, chemical processing plants, and textile finishing plants.

***Thermal Oxidation and Catalytic Oxidation***: A Regenerative Thermal Oxidizers (RTO) uses a high-density media (such as ceramic-packed bed) still hot from a previous cycle to preheat an incoming VOC-laden waste gas stream. The preheated, partially oxidized gases then enter a combustion chamber whre they are heated by auxiliary fuel (i.e. natural gas) combustion to a final oxidation temperature typically between 760ºC to 820ºC (1,400ºF to 1,500ºF) and maintained at this temperature to achieve maximum VOC destruction. However, temperatures of up to 1,100ºC (2,000ºC) may be achieved, if required, for very high control efficiencies of certain toxic VOCs. The purified, hot gases exit this chamber and are directed to one or more different ceramic-packed beds cooled by an earlier cycle. Heat from the purified gases is absorbed by these beds before the gases are emitted to the atmosphere. The reheated packed bed then begins a new cycle by heating a new incoming waste gas stream.

A Regenerative Catalytic Oxidizer (RCO) operates in the same manner as an RTO. However, it uses a catalyst material rather than ceramic material in a packed bed. This allows for destruction of VOC at a lower oxidation temperature. An RCO uses a precious metal catalyst in the packed bed, allowing oxidation to occur at approximately 400ºC (800ºF). The lower temperature requirement reduces the amount of natural gas needed to fuel the VOC abatement system and the overall size of the incinerator. Catalysts typically used for VOC incineration include platinum and palladium.

VOC destruction efficiency depends upon design criteria. The typical regenerative incinerator design efficiencies range from 59% to 99% for RTO systems and 90% to 99% for RCO systems (depending on system requirements and characteristics of the contaminated stream). Lower control efficiencies are generally associated with lower concentration flows.

***Adsorption***: Adsorption is the use of a solid material to trap a gas. The material most commonly used is carbon, a highly porous material. Adsorption occurs in two ways: (1) physical adsorption – van der Waal’s forces attract and hold gas molecules to the adsorbent surface; (2) chemical adsorption – gas molecules are chemically bonded to the adsorbent. Additionally, within the capillaries of the porous solid, surface adsorption is supplemented by capillary condensation. The VOCs are usually recovered by stripping the organics from the solid by heating with steam.

Activated carbon is the most widely used adsorbent for recovering VOCs. Carbon adsorption is usually more economical than combustion for the control of organic compounds in low concentrations where the cost of supplemental fuel can be very high. Depending on the application, carbon adsorption efficiencies can be at least 95%. In addition, this control technique offers the recovery of adsorbed organics, which can be recycled to the process or used as fuel. Recovery and reuse has gained greater favor by industries.

Adsorption systems have been used successfully in the following industries: organic chemical processing, varnish manufacture, synthetic rubber manufacture, production of selected rubber products, pharmaceutical processing, graphic arts operations, food production, dry cleaning, synthetic fiber manufacture, and some surface coating operations.

***Biofiltration***: In biofiltration, off-gases containing biodegradable organic compounds are vented (under controlled temperature and humidity) through a biologically active material. The process uses a biofilm containing compost or numerous synthetic media. As an air stream passes through the biofilter, the contaminants in the air stream partition form the gaseous phase to the liquid phase of the biofilm. Once the contaminants pass into the liquid phase, they become available for the complex oxidative process by microorganisms inhabiting the biofilm.

***Condensation***: Condensation is the physical change from the vapor phase to the liquid phase. Condensers operate in either of two ways: (1) a constant pressure system (the most common) where the temperature of the gas stream is reduced to cause the desired condensable materials to liquefy or; (2) increasing the pressure of a gas stream to cause the combustible material to liquefy (less common). Condensation is also commonly applied to a gas stream to reduce VOC concentrations before the stream is routed to the other “*add-on*” devices.

Condensers have been used successfully in bulk gasoline terminals, petroleum refining, petrochemical manufacturing, dry cleaning, degreasing, and tar dripping.

The VOC efficiency achieved by a condenser, as a sole add-on control device, is a function of the following parameters: (1) the heat capacity and temperature of the inlet exhaust stream; (2) the heat transfer characteristics of the condenser (including the heat transfer area and the heat transfer coefficient); (3) the outlet temperature of the exhaust gas exiting the condenser. Condenser are most effective in single component systems involving emission streams with a high percentage of a condensable VOC because less heat must be removed from the exhaust gas to reduce the sensible heat of non-condensable gases and the required condenser temperature to achieve high levels of recovery. Unlike other VOC control devices for which quantifying control efficiency can require emissions testing, only the outlet exhaust gas temperature is required to estimate the VOC control efficiency of a condenser if the temperature, VOC concentration, and flow rate of the non-condensables in the inlet exhaust stream are all known. Since the control efficiency of a condenser is dynamic and based on the outlet temperature and inlet concentration of VOC in the exhaust stream, condensers exhibit a wide range of VOC control efficiency from as low as 50% to as high as 99%.

***Wet Scrubbing***: The scrubbing of gas or vapor pollutants from a gas stream is usually accomplished in a packed column (or some other type of column) where the pollutants are absorbed by the countercurrent flow of a scrubbing liquid. The scrubbing liquid can be water, caustic solution, or other liquid media.

***Proper Maintenance and Operating Practices***: Proper maintenance and operating practices are comprised of work practice and operational standards and recordkeeping / reporting requirements. The establishment of these good operating practices is intended to minimize VOC emissions from the CDKs to the extent practicable. This method involves no add-on pollution controls. However, written procedures of best management practices, proper maintenance and operating activities can be an effective abatement technique when combined with the training of employees and recordkeeping.

* STEP 2 – Eliminate technically infeasible control options

***Thermal Oxidation and Catalytic Oxidation***: Several factors make the use of a RTO and/or RCO technically infeasible for controlling VOC emissions from the modified units. First, the installation of emissions collection equipment can affect the quality of the lumber product by disrupting the necessary ventilation and circulation patterns required to maintain the proper moisture content and temperature. Potential back-pressure from a blower generated vacuum would disrupt the controlled drying environment and adversely affect the lumber product quality.

The high moisture content and low exit temperature of the exhaust stream would likely make an RTO technically infeasible. While an RCO can operate at lower temperatures than an RTO, the exit temperature of the exhaust stream from the CDKs is still too low for this option to be feasible. Also, the low temperature of the exhaust stream precludes the system from using a catalytic oxidizer system for VOC control. Even more, due to the sensitive nature of the catalysts, even small amounts of particulate matter / other contaminants in the exhaust stream would cause a loss of catalytic activity and make the catalytic oxidizer system less effective. The use of this technology is infeasible on the reasons stated above and evidenced by the fact that no lumber drying kiln (batch or continuous) is listed within the RBLC database or within the air permit database review that utilizes thermal oxidation on this type of equipment. Overall, thermal oxidation and catalytic oxidation have been determined to be technically infeasible.

***Adsorption***: The CDK exhaust contains water vapor that has evaporated from the lumber, as it is dried and will have a relative humidity of 100%. At high moisture contents, the water molecules and VOCs in the exhaust stream will compete with each other for active adsorption site adhesion. Consequently, this will reduce the efficiency of the adsorption system. Therefore, this control device has been determined to be technically infeasible.

***Condensation***: Condensation requires that the exhaust stream be cooled to a low enough temperature to allow for VOCs to transfer from a gas phase to a liquid phase. The primary constituents within the exhaust stream from lumber kilns are terpenes (a class of VOCs), which would require the temperature of the exhaust stream to be lowered well below 0ºF in order to have a low enough vapor pressure to utilize condensation. Consequently, temperatures that low would cause the water vapor in the exhaust stream to freeze, and the resulting ice would clog the unit. As such, condensation is not a technically feasible control technology.

***Biofiltration***: Microbial activity within the filter media is readily affected by temperature conditions. Mesophilic conditions (i.e. 25ºC – 40ºC) are ideal for biofiltration operations, and most biofilters consequently operate in ambient temperatures. Some microbes are known to function effectively in thermophilic conditions (40ºC – 55ºC). However, in cases of extreme temperatures, cell components can begin to decompose, and proteins within enzymes can become denatured / ineffective. The temperature of the exhaust stream from the CDKs will be approximately 65ºC (150ºF), which exceeds the typical operational temperature for biofilters.

The primary constituents within the exhaust stream are terpenes, which are high viscous and would cause the biofilter to easily foul. Moreover, due to the unique long-chained hydrocarbons that make up terpenes, a biofilter with a reasonable footprint / retention time will have a reduced control efficiency. Consequently, the microorganisms will require a much longer retention time / unit size in order to achieve an increased efficiency.

There is no know instance of a biofilter being installed in a lumber mill. Furthermore, the application of biofiltration technology for VOC removal from lumber kiln emissions has not been demonstrated. Due to the temperature requirement, the large land requirement, and the unproven ability to operate successfully for VOC removal from lumber kiln emissions, biofiltration control technology is considered technically infeasible.

***Wet Scrubbing***: While some VOCs present in the exhaust stream are highly soluble in water, other VOCs (most notably α-pinene) are only very slightly soluble in water. Lower solubility VOCs would require much longer residence time within a scrubber packed column. As a result, this requirement would eliminate the technology as a technically viable solution for the constant stream that would need to be handled from the CDKs.

Wet scrubbing for VOC removal is also technically infeasible for application in drying kilns due to the disruption in air created by this type of add-on control. A vacuum blower would be necessary to route kiln emissions to the wet scrubber. As discussed previously (within the “***Thermal Oxidation and Catalytic Oxidation***” section), the installation of a vacuum blower would affect the temperature and moisture content of the kiln atmosphere and degrade the quality of the lumber product.

* STEP 3 – Rank the remaining control technologies

As all control technologies that possessed “add-on” devices were deemed technically infeasible, “***Proper Maintenance and Operating Practices***” is the only remaining control technology considered viable.

* STEP 4 - Evaluate the most effective control(s)

Based on the top-down BACT analysis, Weyerhaeuser determined that “***Proper Maintenance and Operating Practices***” are the only controls technically and economically feasible for the proposed modification to the CDKs. In evaluating the most effective control methods for this option, the RACT / BACT / LAER database was searched for determinations published from 2007 to 2017. From this search, all of the control methods presented were some form of outline work practices. There were no studies found in the review that evaluated the variability of VOC emissions with work practice standards.

Proper operation of a lumber drying kiln primarily involves the design of temperature profiles throughout the kiln and the selection of a final lumber moisture content. Operating the kiln at higher than ideal temperatures has the potential to drive off additional, higher molecular-weight organic constituents form the lumber. Similarly, drying the lumber for a longer period of time to achieve a lower final moisture content has the potential to increase volatilization of organic constituents. Increasing the operating temperature of the kiln and over-drying the lumber both increase the cost of the lumber both increase the cost of operating a lumber drying kiln. The same conditions needed to minimize emissions from a kiln also minimize costs and improve profitability. Wholesale lumber market specifications generally establish the maximum allowable moisture content for a given grade of lumber or end-use of the product.

* STEP 5 – Select BACT

Weyerhaeuser proposes the following work practice standards as BACT for the CDKs:

* + Kiln operation control equipment will be calibrated and operated as per manufacturer’s specifications.
  + The lumber kiln drying operation target final moisture content will be set at 12% or greater.
  + Routines for preventative maintenance will be as detailed in a monitoring based on manufacturer’s recommendations. The plan will, at a minimum, identify the frequency of maintenance for the following activities:
    - Conducting walk-around inspections;
    - Confirming wet bulb proper operation;
    - Conducting entrance / exit baffles inspections;
    - Greasing kiln cart wheels and fan shaft bearings;
    - Checking hydraulic oil levels;
    - Calibrating moisture content equipment;
    - Calibrating temperature probe equipment.

# Source Impact Analysis

The owner or operator of a proposed source or modification is required to demonstrate that allowable emission increases from the proposed source or modification, in conjunction with all other applicable emissions increases or reductions (including secondary emissions), will not cause or contribute to air pollution in violation of: (1) any national ambient air quality standard in any air quality control region; or (2) any applicable maximum allowable increase over the baseline concentration in any area.

The modeled concentrations used to determine compliance with any NAAQS and PSD increment depend on (1) the type of standard (i.e. deterministic or statistical), (2) the available length of record of meteorological data, and (3) the averaging time of the standard being analyzed. When the analysis is based on 5 years of National Weather Service meteorological data, the following estimates are used:

* For deterministically based standards (e.g., SO2), the highest, second-highest short-term estimate and the highest annual estimate; and
* For statistically based standards (e.g., PM10), the highest, sixth-highest estimate and highest 5-year average estimate.

## Existing Air Quality and Air Quality Monitoring Requirements

Any application for a permit under the Prevention of Significant Deterioration program is required to contain an analysis of ambient air quality in the area that the major stationary source or major modification would affect for each of the following pollutants: (a) for the source, each pollutant that it would have the potential to emit in a significant amount; (b) for the modification, each pollutant for which it would result in a significant net emissions increase.

The existing air quality is defined by the natural and human-generated sources of air pollution. The area surrounding the Neshoba County facility is considered rural and in attainment for all regulated pollutants. The pollutant under consideration in the analysis is Volatile Organic Compounds (VOCs).

The MDEQ operates an ambient air quality network throughout the state of Mississippi and report their findings in the, “*Mississippi Department of Environmental Quality Air Quality Data Summary*.” This report looks at the reported levels of the criteria pollutants at various monitoring sites located across the State and compares these levels to the NAAQS to determine how the state is doing in meeting these standards. There is one primary and secondary ozone standard, the 8-hour average. MDEQ monitors ozone continuously from March 1 through October 31 each year across the state. The closest ozone monitor to the Weyerhaeuser– Philadelphia Facility is located approximately 57 km to the northwest, in Meridian, Lauderdale County, MS. Weyerhaeuser is proposing to use the following monitoring data in lieu of conducting preconstruction monitoring. These monitors show the area will be well below the new ozone standard of 70 ppb. The following table presents the ozone annual fourth-highest daily maximum 8-hr concentration, averaged over 3 years (ppm):

|  |  |  |
| --- | --- | --- |
| **County** | **Year** | **4th Max (ppb)** |
| Lauderdale | 2015 | 56 |
| 2016 | 58 |
| 2017 | 55 |
| 3-Year Average | 56 |

## Modeling Procedure

All estimates of ambient concentrations are to be based upon applicable air quality models, data bases and other requirements specified in appendix W of 40 CFR Part 51 (Guideline on Air Quality Models).

The area surrounding Neshoba County is considered rural. In rural air in the southeast there are large sources of VOCs associated with emissions from forests that tend to lead to large VOC/NOx ratios. Consequently, rural areas tend to be NOx sensitive.

In accordance with the December 2016 Memo, “*Guidance on the Development of Modeled Emission Rates for Precursors (MERPs) as a Tier 1 Demonstration Tool for Ozone and PM2.5 under the PSD Permitting Program*”, EPA modeled hypothetical sources in various states to determine source level maximum predicted downwind impacts on 8-hr Ozone. Table 7-1 of the EPA Guidance (as updated in the MERPs Data Distribution and Errata Memo, dated February 23, 2017) lists the most conservative Modeled Emission Rate for Precursors in the Central US to be 948 tpy VOC considering the less than significant increase in impact to the 8-hour ozone standard. The project increases are approximately 13% of this value and the maximum increase in ozone is expected to be approximately 13% of the proposed significant impact level (SIL) of 1 ppb. Therefore, the project is considered to have insignificant impacts on ambient ozone concentrations and no further analysis is required.

## Vegetation and Soils Impact

The secondary NAAQS are set to “protect the public welfare from any known or anticipated adverse effects'' associated with ambient concentrations of the pollutant. The term “*welfare*” is defined in the Clean Air Act to include “*effects on soils, water, crops, vegetation, man-made materials, animals, wildlife, weather, visibility, and climate*”.

VOCs are regulated as precursors to tropospheric ozone. Ozone is formed by the interaction of NOx, VOCs, and sunlight in the atmosphere. VOCs interfere with the ability of plants to produce and store food, making them more susceptible to disease, insects, or other pollutants and harsh weather. Elevated ground-level ozone concentrations can damage plant life and crop production by reducing photosynthesis, slowing plant growth, and increasing plant sensitivity to disease, insects and severe weather. Both the primary and secondary standard for 8-hour ozone was recently set at 0.070 ppm (or 70 ppb). The secondary standard is established to provide protection against decreased visibility and damage to animals, crops, vegetation, and buildings. The project potential for ozone formation due to emissions from the facility is insignificant and if added to the background concentration would not exceed 70 ppb. The majority of VOCs emitted from the facility is alpha-pinene, which is naturally emitted in the southeast from forests. No adverse impacts on soils and vegetation is anticipated.

## Associated Growth Impact

There will be no increase in the work force as a result of the proposed modification, and therefore, no additional demand on housing and public utilities. Moreover, no growth due support facilities is anticipated.

## Class I Impact and Visibility

The proposed facility is located approximately 231 km from the Sipsey Wilderness Area and 302 km from the Breton Wilderness Area. A PSD Application Summary for this project was provided to the Fish and Wildlife Service and the Forest Service, and confirmation was received that no further information was required for their review. Due the distance and the proposed emission rates, no adverse impacts at the Class 1 areas are anticipated.

# Recommendation

The impacts of the emission of air pollutants from the proposed project have been evaluated and the staff believes that, with proper constraints and limitations, this project will operate within all State and Federal air pollution control laws and standards and will be protective of public health and welfare. Therefore, the staff of the Board has preliminarily decided, based on available information, to recommend to the Board that the permit be issued to reflect the requested construction of emissions equipment. However, before proceeding further with the staff evaluation, public comments are being solicited. The staff recommendation to the Board, as well as the Board decision, will be made only after a thorough consideration of all public comments.