INTERFOR U.S. INC

PRESTON, GEORGIA

SAWMILL

PSD

AIR PERMIT APPLICATION PACKET

PREPARED FOR

EPA REVIEW

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LIST OF ACRONYMS AND ABBREVIATIONS

AAQS	Ambient Air Quality Standards
AQRV	air quality related value
BACT	Best Available Control Technology
BF	board feet
Btu/lb	British thermal units per pound
CAA	Clean Air Act
CEC	cation exchange capacity
CFR	Code of Federal Regulations
CO	carbon monoxide
EPA	U.S. Environmental Protection Agency
gal/hr	gallons per hour
g/s	grams per second
GEP	Good Engineering Practice
GEPD	Georgia Environmental Protection Division
HAP	hazardous air pollutant
HSH	highest, second-highest
km	kilometer
LAER	lowest achievable emission rate
lb/hr	pounds per hour
MACT	Maximum Achievable Control Technology
MMBtu/hr	million British thermal units per hour
NCASI	National Council for Air and Stream Improvement, Inc.
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NSPS	New Source Performance Standards
NSR	new source review
NWA	National Wilderness Area
NWR	National Wildlife Refuge
O_3	ozone
OCGC	Official Code of Georgia Annotated
PCWP	plywood and composite wood products

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LIST OF ACRONYMS AND ABBREVIATIONS (cont'd)

PM	particulate matter
PM_{10}	particulate matter with an aerodynamic diameter equal to or less than 10 micrometers
ppm	parts per million
PSD	prevention of significant deterioration
RACT	Reasonably Available Control Technology
RBLC	RACT/BACT/LAER Clearinghouse
SAM	sulfuric acid mist
SIP	State Implementation Plan
SO_2	sulfur dioxide
SR	State Road
TB	Technical Bulletin
TPH	tons per hour
TPY	tons per year
TSP	total suspended particulates
VE	visible emissions
VOC	volatile organic compound

1.0 INTRODUCTION

Interfor's Preston Sawmill has evaluated options relative to compliance with the Boiler MACT rules and future production needs of the plant and is subsequently submitting this applications to allow for construction. Currently the mill operates two boilers, three indirect heated batch kilns, and two direct heated batch kilns. To comply with Boiler MACT and meet the production needs of the mill Interfor has decided to shut down the two boilers, Kiln 1, and Kiln 2. The plan also includes modification of Kiln 3 into a direct fired continuous kiln with its own burner and fuel silo, the modification of Kiln 4 and Kiln 5 into continuous direct fired kilns with some additional work being performed on their burners.

The Preston facility has chosen to utilize 2006 and 2007 as the baseline relative to this project. An analysis of the available data since January of 2006 indicated that the highest plant wide production and subsequent emission rates occurred in the years 2006 and 2007. These years were subsequently chosen as the baseline period for the analysis.

The proposed project does involve an increase in VOC emissions that barely trigger the PSD threshold. A modeling report is included explaining the expected results from the increase along with a BACT analysis. An Air Toxics Modeling report is also included since this is required for all projects that trigger PSD in Georgia.

Interfor request that the Department review the application and issue the permit under the expedited permit process.

The existing sawmill is considered to be a major source under PSD regulations for VOC emissions, and based on the project related increase in emissions as compared to the PSD significant emission rates, the proposed project is considered a major modification to a major source. Based on the comparison of past actual annual emissions to future potential annual emissions the increased production results in increased emission of volatile organic compounds (VOC) and trigger new source review (NSR) under federal and state prevention of significant deterioration (PSD) regulations.

For each pollutant subject to PSD review, the following analyses are required:

1. Ambient monitoring analysis, unless the net increase in emissions due to the modification causes impacts that are below specified significant impact levels;
2. Application of best available control technology (BACT) for each new or modified emissions unit, for each pollutant subject to PSD review;
3. Air quality impact analysis, unless the net increase in emissions due to the modification causes impacts which are below specified significant impact levels; and an
4. Additional impact analysis (*e.g.,* impact on soils, vegetation, visibility), including impacts on PSD Class I areas.

This PSD permit application addresses these requirements and is organized into seven additional sections. A description of the project, including air emission sources and pollution control equipment, is presented in Section 2.0. The regulatory applicability analysis for the proposed project is presented in Section 3.0. The required ambient air monitoring analysis is presented in Section 4.0. The BACT analysis is presented in Section 5.0, and the additional impact analysis required by PSD rules is presented in Sections 6.0 and 7.0. Air Toxics Modeling is presented n 8.0.

2.0 PROJECT DESCRIPTION

To comply with Boiler MACT and meet the production needs of the mill Interfor has decided to shut down the two boilers, Kiln 1, and Kiln 2. The plan also includes modification of Kiln 3 into a direct fired continuous kiln with its own burner and fuel silo, the modification of Kiln 4 and Kiln 5 into continuous direct fired kilns with some additional work being performed on their burners. The facility is located at 378 Tolleson Rd. Preston, Georgia 31824 in Webster County (see Figure 2-2). The following sections describe the proposed project in more detail.

2.1 Existing Operations

Interfor currently operates two wood fired boilers, three steam heated batch lumber kilns, two direct fired batch lumber kilns, a sawmill, and planer mill under permit Title V Operating Permit 2421-307-0001-V-04-0.

In addition to the kilns, the facility has systems to receive green logs and to debark, saw and chip the green logs (refer to flow diagram in Figure 2-3). The sawing and chipping operation produces chips, which are sent to a chip bin for shipment offsite, and also produces green sawdust, which is pneumatically sent to a bin with a cyclone. The green sawdust is used for fuel in the gasifiers for the kilns.

Dried dimensional lumber is sent to a planer mill where it is sized to specification. The operation produces shavings, which are pneumatically sent to a cyclone and a shavings bin. The facility also has a storage area for dimensional lumber, and other related equipment.

2.2 Proposed Modifications

To comply with Boiler MACT and meet the production needs of the mill Interfor has decided to shut down the two boilers, Kiln 1, and Kiln 2. The plan also includes modification of Kiln 3 into a direct fired continuous kiln with its own burner (35 MMBtu/hr heat input capacity) and fuel storage silo, the modification of Kilns 4 and 5 into direct fired continuous kilns with some additional work being performed on the existing burners (for Kiln 4 and Kiln 5). The facility will also be adding a powered stack to each of the three kilns to assure compliance with the ambient air toxic regulations.

Each gasifier contains a bypass stack, but the bypass stacks are only used for startups and shutdowns and malfunctions.

A completely separate project (than the kilns modification and boiler/kilns removal) that Interfor is also requesting to obtain permit approval is for a new bark loadout system. The new loadout system will include two hoppers, bark hogger, bark storage bin, and truck loadout operation.

2.3 Air Emission Estimates and Pollution Control Equipment

The dry kilns will not contain any add-on pollution control equipment. Emissions from the kilns consist mainly of VOCs that are normally released through the exit doors. PM emissions from the sawdust conveying system, which conveys the fuel for the gasifiers from the sawmill to the fuel storage silos, are/will be controlled with cyclones. PM emissions from the chipping operations and shavings from the planer mill are controlled by three cyclones. No modifications to these existing cyclones or increase in potential operation will occur regarding the chipping operations and planer mill.

The following sections describe the past actual emissions and proposed project emissions increases as part of the NSR permitting evaluation methodology.

2.3.1 Defining Existing versus New Emission Units

Different calculation methodologies are used for existing and new units; therefore, it is important to clarify whether a source affected by the proposed project is considered a new or existing emission unit.

40 CFR 52.21(b)(7)(i) and (ii) define new unit and existing units:

> *(i) A new emissions unit is any emissions unit that is (or will be) newly constructed and that has existed for less than 2 years from the date such emissions unit first operated.*
>
> *(ii) An existing emissions unit is any unit that does not meet the requirements in paragraph (b)(7)(i) of this section. A replacement unit, as defined in paragraph (b)(33) of this section, is an existing emissions unit.*

Based on these definitions, the three (3) direct-fired continuous wood drying kilns will be classified as modified emission units. Specifically, Kiln 3 will be modified to convert the lumber kiln into a continuous kiln using the existing infrastructure of the kiln with the addition of extending each end of the kiln for the continuous operation. Also, the new direct-fired system will be added for Kiln 3, but will be ducted into the existing kiln infrastructure.

Kilns 4 and 5 will both be physically modified for the required extension to each end of the kilns for the continuous operation of the modified units. No modification will be completed to the existing Kiln 4 burner (36 MMBtu/hr). The Kiln 5 direct-fired burner will be modified to add one additional grate increasing the maximum heat input capacity to 40 MMBtu/hr.

Additionally, since new fuel storage silo will be used for the direct-fired burners (fuel provided to either of the three burners), Interfor has identified the new fuel silo as a new emission unit for the PSD applicability analysis. A new cyclone will be installed to control emissions of PM.

2.3.2 Annual Emissions Increase Calculation Methodology

The Preston facility is currently classified as a major source for PSD. Since the Preston facility is currently a major source with respect to NSR and since the proposed project emissions increase exceed the VOC Significant Emission Rate (40 tpy), an emissions netting analysis can be included for the proposed project. Therefore, the projected actual emissions of the modified kilns and potential emissions for the fuel storage silo are evaluated as the project emissions increases minus the creditable emissions decrease associated with the emission units to be removed as part of the project. The emissions increase from ancillary equipment is based on the change in projected actual emissions resulting from the increased production.

2.3.3 Past Actual Emissions

Past actual (baseline) emissions were determined for the lumber kilns with emission factors reflective of the operation of two boilers, three steam heated kilns, and two direct fired batch kilns. Specifically, for the four removed emission units (two boilers and Kilns 1 and 2), an analysis of the available data since January of 2006 indicated that the highest plant wide production and subsequent emission rates occurred during the 24-month period from January 2006 through December 2007. These years were subsequently chosen as the baseline period for the analysis regarding these removed emission units. For the modified emission units (Kilns 3, 4, and 5), the baseline period was established as January 2014 through December 2015. Historical Boiler and Kiln Production Data is provided in Appendices A and B.

The past actual annual emissions for the Interfor's Preston facility are presented in Appendix B which contains the detailed emissions calculations.

The emission factors utilized for estimating the past actual emissions for the two boilers to be removed as part of the project are summarized in Table B-1 of Appendix B. The Kilns 1 and 2 past actual emissions are calculated using the emission factors included in Table B-2 of Appendix B. The Kilns 3, 4 and 5 past actual emissions are calculated using the emission factors included in Table B-3 of Appendix B.

2.3.4 Projected Actual Emissions

Potential emissions from the modified continuous kilns were evaluated using the maximum production capacities of the kilns (MMBF/yr) and the burner heat input capacities (MMBtu/hr) in conjunction with either National Council for Air and Stream Improvements (NCASI) emission factors or AP-42 factors.

Potential emissions of all criteria pollutants (except SO_2, lead and GHGs) from the direct-fired continuous kilns were calculated by multiplying the maximum production capacity of dried lumber from the kilns (MBF/year) by the appropriate emission factor (lb/MBF). Potential emissions of SO_2, lead, and GHGs were calculated based on the heat input of the wood combusted (MMBtu/year) multiplied by the pollutant emission factor (lb/MMBtu).

All of the criteria pollutant emission factors, with the exception of SO_2, are based on NCASI values for direct-fired kilns that were either provided to Interfor or were obtained from publicly available sources. The emission factor for SO_2 is from AP-42, Section 1.6, Wood Residue Combustion for a boiler with no controls.

The NCASI emission factors that are used in the emission calculations were initially developed for batch lumber kilns. Since continuous kilns are a new technology, there is limited testing data. No NCASI publicly available reviewed testing data was located for continuous kilns.[1] The emission factors for a continuous kiln are expected to be equal to or less than that of a batch kiln.

The majority of VOC emitted by the lumber kilns are a result of compounds being released from the wood during the drying process. Relatively few VOC are a result of combustion. VOC emissions from drying releases likely depend on a number of factors, including the type of wood being dried, the size of the wood, the season of the year, kiln operating conditions, and the original and final moisture contents of the wood. The main type of VOC emitted from the wood is in the form of terpenes, primarily alpha-pinene, from southern yellow pine. There are also water soluble VOC released from the kilns such as methanol and formaldehyde, which could potentially be entrained in the significant quantities of water discharged from continuous kilns.

For NSR purposes, U.S. EPA requires the total mass of VOC be relied upon for permitting assessments. Given the unique nature of exhaust streams from wood product facilities, U.S. EPA has established a protocol for adjusting traditional VOC as carbon emission factors to a total mass VOC basis. The protocol is intended to address limitations and challenges in VOC testing methods. Per the methodology established, the VOC emission factor for continuous kilns is calculated using the following equation:[2]

$$Total\ VOC = VOC\ as\ C \times 1.133 + (1 - 0.65) \times Methanol + Formaldehyde$$

The VOC as carbon emission factor (VOC as C, generally from EPA Method 25/25A test method) is multiplied by 1.133, the ratio of the molecular weight of pinene ($C_{10}H_{16}$, 136 amu) to the molecular weight of the carbon in pinene (120 amu). As the EPA Method 25/25A test method does not register oxygenated compounds well, emissions of formaldehyde and methanol must be added to appropriately account for their presence in exhaust streams from wood product facilities. Accordingly, EPA has agreed to “response factors” for these chemicals that account for what the EPA Method 25/25A tests would observe. For example,

1 Emissions testing has been completed on a continuous gasifier-combustor kiln operated by Bibler Bros. in Arkansas. However, this testing represents a limited data set from which overall trends cannot be reasonably established.

2 EPA, document entitled, “Interim VOC Measurement Protocol for the Wood Products Industry – July 2007,” page 2.

formaldehyde is not typically "recognized" in the VOC test method. Therefore, it has a 0% response factor; whereas 65% of methanol present in an exhaust stream is captured within the VOC as C emission factor. Hence, to avoid double-counting of emissions, the speciated methanol emission factor is reduced by 65%.

2.3.5 Future Potential Emissions

The future plant wide potential emissions are presented in Appendix B which contains the detailed calculations.

Future potential annual emissions, are based on a total throughput of 260 MMBF per year through the direct-fired kilns (60 MMBF/yr for Kiln 3, and 100 MMBF/yr for both Kilns 4 and 5).

The VOC emission factor for the direct-fired kilns was determined after review of NCASI published test data from February 2013 as well as information available from the RACT/BACT/LAER Clearinghouse (RBLC) on EPA's web page. The NCASI publication contains a study of VOC emission factors for direct- and indirect-fired kilns. The average VOC emission rate for full-scale direct-fired continuous kilns is 3.87 lbs VOC (as terpene + methanol + formaldehyde) per thousand BF.

Potential emissions for the new fuel storage silo are based on the exit grain loading rate (0.02 gr./scf) requested by Interfor for limiting the total PM, PM10, and PM2.5 emissions increase associated with the proposed project. The new silo will have an exhaust flow rate of 5,000 standard cubic feet per minute (scfm) and will be controlled with a cyclone. Potential operation of the new fuel storage silo will be continuous (8,760 hr/yr). Per the EPA Calculator, PM10 is assumed to be 40% of total PM and PM2.5 is assumed to be 25% of total PM.

2.3.6 Ancillary Equipment Emission Increases

In addition to emissions from the modified kilns and new fuel storage silo, the proposed project will result in emissions increases from ancillary equipment at the mill associated with the increased drying capacity of the kilns. Note that only filterable PM, filterable PM10, and filterable PM2.5 are emitted from the ancillary equipment associated with the proposed project. Detailed emission calculations for each process are included in Appendix B.

2.3.6.1. Sawing and Debarking

Increases in fugitive PM emissions from sawing and debarking were based on the increased lumber throughput through those portions of the facility. A control efficiency of 90% is applied to account for the activities being performed in a full enclosure for sawing. Note that this control efficiency does not take into account that the wood being cut has a high moisture content and would therefore generate less emissions than dry materials.

Increases in fugitive PM emissions from the sawing and debarking operations were calculated using emission factors based on Equation 1 of AP-42, Section 13.2.4, Aggregate Handling and Storage Piles. This estimate is expected to be a highly conservative assessment of the potential PM emissions.

2.3.6.2. Chipper

The increase in fugitive PM emissions from the chipper was based on the increased lumber throughput for those units. A control efficiency of 90% was applied to account for the activities being performed in a full enclosure. Increases in fugitive PM emissions from the chipper operations were calculated using emission factors based on Equation 1 of AP-42, Section 13.2.4, Aggregate Handling and Storage Piles.

2.3.6.3. Material Transfer Sources

Increases in fugitive PM emissions from the truck loading and transfer of chips, bark, sawdust, and wood shavings were calculated using emission factors based on Equation 1 of AP-42, Section 13.2.4, Aggregate Handling and Storage Piles. This estimate is expected to be a highly conservative assessment of the potential PM emissions.

2.3.6.4. Planer Mill

The emissions from the cyclones controlling the planer mill operations were determined to not be modified as part of the project. Therefore, no ancillary emissions increases are required to be estimated due to no increase in exhaust flow rate across the planer mill cyclones nor hours of operation.

2.3.6.5. Roads

Fugitive PM emissions from the increased truck traffic on the facility roadways were estimated based on the vehicle miles travelled (VMT) by trucks that will transport additional materials to and from the facility. Vehicle miles traveled on site were estimated based on the distance of the anticipated truck route for each material and the number of trips necessary to support continuous operation of the new kilns. Emission calculations for fugitive unpaved road dust emissions were developed based on AP-42, Section 13.2.2, Unpaved Roads.

2.3.7 Total Project Related Increases vs. PSD Threshold

Total Project Related Increases vs. PSD Threshold are presented in Table 2-1. This table compares past actual emissions for the facility. An evaluation of the project related increases in emissions predicts an increase in total VOC of 96.02 tons per year which triggers VOC. All other emission increases are below the threshold with emissions actually decreasing for many parameters.

Table 2-1

Kilns Conversion - Emissions Changes vs. PSD Threshold

	Plant Wide Emission Increases and Decreases	PSD Threshold
CO	-149.04	100
NOX	-29.38	40
SO2	3.34	40
PM	9.69	25
PM10	2.63	15
PM2.5	-0.09	10
VOC Total	86.38	40
CO2e	-27,967	75,000

2.4 Bark Loadout System

As part of a separate project, Interfor is proposing the addition of a bark loadout system. The project is considered separate than the kiln conversion project and boilers removal. The bark previously utilized as fuel in the boilers to be removed will be handled and transferred off-site via trucks. The new loadout system will include two hoppers, bark hogger, bark storage bin, and truck loadout operation.

2.4.1 Hogger

The potential fugitive PM emissions from the hogger was based on the bark throughput for the unit. Potential fugitive PM emissions from the hogger operations were calculated using emission factors based on log debarking emission factor from the EPA FIRE database (July 2001).

2.4.2 Material Transfer Sources

Potential fugitive PM emissions from the truck loading and transfer of bark were calculated using emission factors based on Equation 1 of AP-42, Section 13.2.4, *Aggregate Handling and Storage Piles.* This estimate is expected to be a highly conservative assessment of the potential PM emissions.

2.4.3 Total Project Related Increases vs. PSD Threshold

Total Project Related Increases vs. PSD Threshold are presented in Table 2-2 for the bark loadout system. This table compares potential emissions for the new system. An evaluation of the project related increases in emissions predicts an increase in PM of 0.95 tons per year.

Table 2-2

Bark Loadout System - Emissions Changes vs. PSD Threshold

	Project Emission Increases	PSD Threshold
PM	0.95	25
PM10	0.52	15
PM2.5	0.49	10

3.0 AIR QUALITY REVIEW REQUIREMENTS

Federal and State air regulatory requirements for a major new or modified source of air pollution are discussed in Sections 3.1 through 3.2. The applicability of these regulations to the proposed Interfor modification is presented in Section 3.3. These regulations must be satisfied before the proposed project can be approved.

3.1 National and State Ambient Air Quality

Primary national AAQS were promulgated to protect the public health, and secondary national AAQS were promulgated to protect the public welfare from any known or anticipated adverse effects associated with the presence of pollutants in the ambient air. Areas of the country in violation of AAQS are designated as nonattainment areas and new or modified sources to be located in or near these areas may be subject to more stringent air permitting requirements.

Georgia has adopted State AAQS in the Official Code of Georgia Annotated (GA Rule) Section 391-3-1. The standards are the same as the national AAQS.

3.2 PSD Requirements

3.2.1 General Requirements

Under federal and State of Georgia PSD review requirements, all major new or modified sources of air pollutants regulated under the Clean Air Act (CAA) must be reviewed and a pre-construction permit issued. Georgia's SIP, which contains PSD regulations, has been approved by the EPA. Therefore, PSD approval authority has been granted to the Georgia Environmental Protection Division (GEPD).

A "major facility" is defined as any one of 28 named source categories having the "potential-to-emit" 100 TPY or more or any other facility having the potential-to-emit 250 TPY or more of any pollutant regulated under the CAA. "Potential-to-emit" means the capability, at maximum design capacity, to emit a pollutant after the application of control equipment. For an existing major source for which a modification is proposed, the modification is subject to PSD review if the net increase in emissions due to the modification is greater than the PSD significant emission rates. The PSD significant emission rates are listed in Table 3-1.

The EPA class designation and allowable PSD increments are also presented in Table 3-1. The magnitude of the allowable increment depends on the classification of the area in which a new source (or modification) will be located or have an impact. Three classifications are designated based on criteria established in the 1977 CAA Amendments. Congress promulgated areas as Class I (international parks, national wilderness areas, and memorial parks larger than 5,000 acres and national parks larger than 6,000 acres) or as Class II (all areas not designated as Class I). No Class III areas, which would be allowed greater deterioration than Class II areas, were designated. The State of Georgia has adopted the EPA class designations and allowable PSD increments for SO_2, PM_{10}, and nitrogen dioxide (NO_2).

PSD review is used to determine whether significant air quality deterioration will result from the new or modified facility. Federal PSD requirements are contained in Title 40 of the CFR, Section 52.21 (Prevention of Significant Deterioration of Air Quality). The State of Georgia has adopted PSD regulations that are equivalent to the federal PSD regulations (GA Rule 391-3-1). Major facilities and major modifications are required to undergo the following analyses related to PSD for each pollutant for which the emissions increase is significant:

- Control technology review;
- Source impact analysis;
- Air quality analysis (monitoring); and
- Additional impact analyses.

In addition to these analyses, a new or modified facility must also be reviewed with respect to Good Engineering Practice (GEP) stack height regulations. Discussions concerning each of these requirements are presented in the following sections.

3.2.2 Control Technology

The control technology review requirements of the federal and state PSD regulations require that all applicable federal and State emission-limiting standards be met, and that BACT be applied to control emissions from the source. The BACT requirements are applicable to all regulated pollutants for which the increase in emissions from the facility exceeds the significant emission rate (see Table 3-1).

BACT is defined in 40 CFR 52.21(b)(12), as:

> *An emissions limitation (including a visible emission standard) based on the maximum degree of reduction of each pollutant subject to regulation under the Act which would be emitted by any proposed major stationary source or major modification which the Administrator, on a case-by-case basis, taking into account energy, environmental, and economic impacts, and other costs, determines is achievable through application of production processes and available methods, systems, and techniques (including fuel cleaning or treatment or innovative fuel combustion techniques) for control of such pollutant. In no event shall application of best available control technology result in emissions of any pollutant, which would exceed the emissions allowed by any applicable standard under 40 CFR Parts 60 and 61. If the Administrator determines that technological or economic limitations on the application of measurement methodology to a particular part of a source or facility would make the imposition of an emission standard infeasible, a design, equipment, work practice, operational standard or combination thereof, may be prescribed instead to satisfy the requirement for the application of BACT. Such standard shall, to the degree possible, set forth the emissions reductions achievable by implementation of such design, equipment, work practice, or operation and shall provide for compliance by means which achieve equivalent results.*

BACT was promulgated within the framework of the PSD requirements in the 1977 amendments of the CAA [Public Law 95-95; Part C, Section 165(a)(4)]. The primary purpose of BACT is to optimize consumption of PSD air quality increments and thereby enlarge the potential for future economic growth without significantly degrading air quality (EPA, 1978; 1980). Guidelines for the evaluation of BACT can be found in EPA's Guidelines for Determining BACT (EPA, 1978) and in the PSD Workshop Manual (EPA, 1980). These guidelines were promulgated by EPA to provide a consistent approach to BACT and to ensure that the impacts of alternative emission control systems are measured by the same set of parameters. In addition, through implementation of these guidelines, BACT in one area may not be identical to BACT in another area. According to EPA (1980), "BACT analyses for the same types of emissions unit and the same pollutants in different locations or situations may determine that different control strategies should be applied to the different sites, depending on site-specific factors. Therefore, BACT analyses must be conducted on a case-by-case basis."

The BACT requirements are intended to ensure that the control systems incorporated in the design of a proposed or modified facility reflect the latest in control technologies used in a particular industry and to take into consideration existing and future air quality in the vicinity of the facility. BACT must, as a minimum, demonstrate compliance with new source performance standards (NSPS) for a source (if applicable). An evaluation of the air pollution control techniques and systems, including a cost- benefit analysis of alternative control technologies capable of achieving a higher degree of emission reduction than the proposed control technology, is required. The cost-benefit analysis requires the documentation of the materials, energy, and economic penalties associated with the proposed and alternative control systems, as well as the environmental benefits derived from these systems. A decision on BACT is to be based on sound judgment, balancing environmental benefits with energy, economic, and other impacts (EPA, 1978).

3.2.3 Source Impact Analysis

A source impact analysis must be performed for a proposed major source or major modification subject to PSD review and for each pollutant for which the increase in emissions exceeds the PSD significant emission rate (Table 3-1). The PSD regulations specifically provide for the use of atmospheric dispersion models in performing impact analyses, estimating baseline and future air quality levels, and determining compliance with AAQS and allowable PSD increments. Designated EPA models normally must be used in performing the impact analysis. Specific applications for other than EPA-approved models require EPA's consultation and prior approval. Guidance for the use and application of dispersion models is presented in the EPA publication *Guideline on Air Quality Models* (EPA, 1980).

To address compliance with AAQS and PSD Class I and II increments, a source impact analysis must be performed. However, this analysis is not required for a specific pollutant if the net increase in impacts as a result of the new source or modification is below significant impact levels, as presented in Table 3-1. The significant impact levels are threshold levels that are used to determine the level of air impact analyses needed for the project. If the new or modified source's impacts are predicted to be less than significant, then the source's impacts are assumed not to have a significant adverse effect on air quality. Additional modeling, taking into account other emission sources, is not required. However, if the source's impacts are predicted to be greater than the significant impact levels, additional modeling, including other emission sources, is required in order to demonstrate compliance with AAQS and PSD increments.

EPA has issued guidance related to significant impact levels for Class I areas. Although these levels have not been officially promulgated as part of the PSD review process and may not be binding for states in performing PSD reviews, the levels serve as a guideline in assessing a source's impact in a Class I area. The EPA action to incorporate Class I significant impact levels into the PSD process is part of implementing the NSR regulations.

Various lengths of record for meteorological data can be used for impact analyses. A 5-year period is normally used with corresponding evaluation of highest, second-highest short-term concentrations for comparison to AAQS or PSD increments. The meteorological data are selected based on an evaluation of measured weather data from a nearby weather station that represents weather conditions at the project site. The criteria used in this evaluation includes: determining the distance of the project site to the weather station; comparing topographical and land use features between the locations; and determining availability of necessary weather parameters.

The term "highest, second-highest" (HSH) refers to the highest of the second-highest concentrations at all receptors (*i.e.*, the highest concentration at each receptor is discarded). The second-highest concentration is important because short-term AAQS specify that the standard should not be exceeded at any location more than once a year. If fewer than 5 years of meteorological data are used in the modeling analysis, the highest concentration at each receptor normally must be used for comparison to air quality standards.

The term "baseline concentration" evolves from federal and State PSD regulations and refers to a concentration level corresponding to a specified baseline date and certain baseline sources. By definition, in the PSD regulations as amended August 7, 1980, baseline concentration means the ambient concentration level that exists in the baseline area at the time of the applicable baseline date. A baseline concentration is determined for each pollutant for which a baseline date is established and includes:

- The actual emissions representative of facilities in existence on the applicable baseline date; and
- The allowable emissions of major stationary facilities that commenced construction before January 6, 1975, for SO_2 and PM_{10}, or February 8, 1988, for NO_2, but that were not in operation by the applicable baseline date.

The following emissions are not included in the baseline concentration, and therefore, affect PSD increment consumption:

- Actual emissions from any major stationary facility on which construction commenced after January 6, 1975, for SO_2 and PM_{10}, and after February 8, 1988, for NO_2; and
- Actual emission increases and decreases at any stationary facility occurring after the baseline date.

In reference to the baseline concentration, the term “baseline date” actually includes three different dates:

- The major facility baseline date, which is January 6, 1975, in the cases of SO_2 and PM_{10}, and February 8, 1988, in the case of NO_2;
- The trigger date, which is August 7, 1977, for SO_2 and PM_{10}, and February 8, 1988, for NO_2; and
- The minor facility baseline date, which is the earliest date after the trigger date on which a major stationary facility or major modification subject to PSD regulations submits a complete PSD application.

3.2.4 Air Quality Monitoring Requirements

In accordance with requirements of 40 CFR 52.21(m), any application for a PSD permit must contain an analysis of continuous ambient air quality data in the area affected by the proposed major stationary facility or major modification. For a major modification, the pollutants are those for which the net emissions increase exceeds the significant emission rate (see Table 3-1).

Ambient air monitoring for a period of up to 1 year generally is appropriate to satisfy the PSD monitoring requirements. A minimum of 4 months of data is required. Existing data from the vicinity of the proposed/modified source may be used if the data meet certain quality assurance requirements; otherwise, additional data may need to be gathered. Guidance in designing a PSD monitoring network is provided in EPA's *Ambient Monitoring Guidelines for Prevention of Significant Deterioration* (EPA, 1987).

The regulations include an exemption that excludes or limits the pollutants for which an air quality monitoring analysis must be conducted. This exemption states that GEPD may exempt a proposed major stationary facility or major modification from the monitoring requirements, with respect to a particular pollutant, if the emissions increase of the pollutant from the facility or modification would cause, in any area, air quality impacts less than the *de minimis* levels presented in Table 3-1.

3.2.5 Source Information/GEP Stack Height

Source information must be provided to adequately describe the proposed project. The general type of information required for this project is presented in Section 2.0.

The 1977 CAA Amendments require that the degree of emission limitation required for control of any pollutant not be affected by a stack height that exceeds GEP or any other dispersion technique. On July 8, 1985, EPA promulgated final stack height regulations (EPA, 1985a). The GEPD has adopted identical regulations (GA Rule 391-3-1(7)(b)4. GEP stack height is defined as the highest of:

- 65 meters (m); or
- A height established by applying the

  formula: $Hg = H + 1.5L$

  where: Hg = GEP stack height;

  H = Height of the structure or nearby structure; and

  L = Lesser dimension (height or projected width) of nearby structure(s); or
- A height demonstrated by a fluid model or field study.

"Nearby" is defined as a distance up to five times the lesser of the height or width dimensions of a structure or terrain feature, but not greater than 0.8 kilometer (km). Although GEP stack height regulations require that the stack height used in modeling for determining compliance with AAQS and PSD increments not exceed the GEP stack height, the actual stack height may be greater.

The stack height regulations also allow increased GEP stack height beyond that resulting from the above formula in cases where plume impaction occurs. Plume impaction is defined as concentrations measured or predicted to occur when the plume interacts with elevated terrain. Elevated terrain is defined as terrain that exceeds the height calculated by the GEP stack height formula.

All proposed stack heights are considerably less that the 65 meter limit so they are within GEP.

3.2.6 Additional Impact

In addition to air quality impact analyses, federal and State of Georgia regulations require analyses of the impairment to visibility and the impacts on soils and vegetation that would occur as a result of the proposed source or proposed modification [40 CFR 52.21(o) and GA Rule 391-3-1(7)(b)11]. These analyses are to be conducted primarily for PSD Class I areas. Impacts as a result of general commercial, residential, industrial, and other growth associated with the source also must be addressed. These analyses are required for each pollutant emitted in significant amounts (Table 3-1).

3.3 Potentially Applicable Emission Standards

3.3.1 New Source Performance Standards

The NSPS are a set of national emission standards that apply to specific categories of new sources. As stated in the CAA Amendments of 1970, these standards "shall reflect the degree of emission limitation and the percentage reduction achievable through application of the best technological system of continuous emission reduction the Administrator determines has been adequately demonstrated."

No federal NSPS exists for direct-heated drying kilns at lumber sawmills.

3.3.2 National Emission Standards for Hazardous Air Pollutants

National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Source Categories standards are codified in 40 CFR Part 63. These standards are based on applying maximum achievable control technology (MACT) to control emissions of HAPs, and are therefore referred to as the MACT standards. They apply to major sources of HAPs, i.e., sources with the potential to emit HAPs of greater than 10 TPY for any individual HAP, or greater than 25 TPY for all HAPs combined.

On July 30, 2004, EPA promulgated final MACT standards for the Plywood and Composite Wood Products (PCWP) source category (40 CFR 63, Subpart DDDD). PCWP facilities are defined to include lumber kilns located at any facility. Although lumber kilns are subject to the MACT, there are no emission limits or work practice standards for lumber kilns included in the final rule.

3.3.3 Georgia Rules

The lumber dry kilns emit PM, which are regulated by GA Rule 391-3-1-.02(2)(e) “Particulate Emissions from Manufacturing Processes”. The allowable PM emissions rate for new equipment with input rates up to and including 30 tons per hour (TPH) is expressed by the following equation:

$E = 4.1P^{0.67}$, where E equals the allowable PM emission rate in pounds per hour (lb/hr) and P
equals the maximum process input weight in TPH.

The allowable PM emissions rate for new equipment with input rates above 30 TPH is expressed by the following equation:

$E = 55P^{0.11} - 40$, where E equals the allowable PM emission rate in lb/hr and P equals the maximum process input weight in TPH.

The allowable PM emissions rate for existing equipment is expressed by the following

equation: $E = 4.1P^{0.67}$, where E equals the allowable PM emission rate in lb/hr

and P equals
the maximum process input weight in TPH.

Based on the wet weight of green lumber of 5 lb/BF and a maximum production rate of 6.8-11.4 MBF/hr through the kilns, the maximum process input weight for the larger kilns are is 28.53 TPH. Therefore, the larger kilns are subject to a maximum PM allowable emissions rate as calculated below:

$$E = 4.1P^{0.67} = 4.1\,(28.53)^{0.67} = 38.71 \text{ lb/hr}$$

The lumber dry kilns are also subject to GA Rule 391-3-1-.02(2)(b), which states that the kiln must comply with a 40% opacity limit. In addition, the kilns must meet the 2.5 percent sulfur limit for fuel burning, as expressed in GA Rule 391-3-1-.02(2)(g).

3.4 Source Applicability

3.4.1 Area Classification

The project site is located in Webster County, which has been designated by EPA and GEPD as an attainment or maintenance area for all criteria pollutants. Webster County and surrounding counties are designated as PSD Class II areas for all criteria pollutants.

3.4.2 PSD Review Pollutant Applicability

The Interfor/Preston sawmill is considered to be an existing major stationary facility because potential emissions of at least one PSD-regulated pollutant exceed 250 TPY (for example, potential VOC emissions currently exceed 250 TPY). Therefore, PSD review is required for any pollutant for which the net increase in emissions due to the modification is greater than the PSD significant emission rates (see Table 3-1).

The net increase in emissions due to the proposed modification at the Interfor/Preston sawmill is summarized in Table 2-1. As shown in Table 2-1, the increase in emissions due to the project exceeds the significance level for VOC. Therefore, PSD review applies for VOC. An evaluation of the impact of the project has been prepared and is attached as a report entitled Summary of Air Quality Modeling.

GEP Stack Height Impact Analysis

All existing stacks at the Interfor/Preston facility currently comply with GEP stack height regulations and all stacks are below the *de minimis* GEP. The facility is proposing to add additional stacks one on each end of DK09. These stacks will be 40 feet each and well below the 65 meter limit.

Source Impact Analysis

To address compliance with AAQS and PSD Class I and II increments, a source impact analysis is commonly performed. However, this analysis is not required for a specific pollutant if the net increase in emissions as a result of the new source or modification is below significant impact levels

No source impact analysis was performed for the project since there are no AAQS or Class I and II increment values specified for VOC. In addition, there are no significant impact levels for VOC.

TABLE 3-1
PSD SIGNIFICANT EMISSION RATES AND *DE MINIMIS* MONITORING CONCENTRATIONS

Pollutant	Significant Emission Rate (TPY)	De Minimis Monitoring Concentration[a] ($\mu g/m^3$)
Sulfur Dioxide	40	13, 24-hour
Particulate Matter [PM(TSP)]	25	NA
Particulate Matter (PM_{10})	15	10, 24-hour
Nitrogen Dioxide	40	14, annual
Carbon Monoxide	100	575, 8-hour
Volatile Organic Compounds [Ozone (O_3)]	40	100 TPY[b]
Lead	0.6	0.1, 3-month
Sulfuric Acid Mist	7	NM
Total Fluorides	3	0.25, 24-hour
Total Reduced Sulfur	10	10, 1-hour
Reduced Sulfur Compounds	10	10, 1-hour
Hydrogen Sulfide	10	0.2, 1-hour
Mercury	0.1	0.25, 24-hour
MWC Organics	$3.5x10^{-6}$	NM
MWC Metals	15	NM
MWC Acid Gases	40	NM
MSW Landfill Gases	50	NM

Note: Ambient monitoring requirements for any pollutant may be exempted if the impact of the increase in emissions is less than *de minimis* monitoring concentrations.

NA = Not applicable.
NM = No ambient measurement method established; therefore, no *de minimis* concentration has been established.
$\mu g/m^3$ = micrograms per cubic meter.
MWC = Municipal waste combustor
MSW = Municipal solid waste

a Short-term concentrations are not to be exceeded.
b No *de minimis* concentration; an increase in VOC emissions of 100 TPY or more will require a monitoring analysis for O3.

Sources: 40 CFR 52.21.
GA Rule 391-3-1.

4.0 AMBIENT MONITORING ANALYSIS

4.1 Monitoring Requirements

In accordance with requirements of 40 CFR 52.21(m) and the GA Rule 391-3-1(7)(b)9, any application for a PSD permit must contain an analysis of continuous ambient air quality data in the area affected by the proposed major stationary facility or major modification. For a major modification, the pollutants are those for which the net emissions increase exceeds the significant emission rate (see Table 3-1). As discussed in Section 3.4.2, VOC emissions are subject to PSD pre-construction monitoring requirements for the proposed modification because the net increase in emissions due to the project exceeds the PSD significant emission rate.

Ambient air monitoring for a period of up to 1 year is generally appropriate to satisfy the PSD monitoring requirements. A minimum of 4 months of data is required. Existing data from the vicinity of the proposed source may be used if the data meet certain quality assurance requirements; otherwise, additional data may need to be gathered. Guidance in designing a PSD monitoring network is provided in EPA's *Ambient Monitoring Guidelines for Prevention of Significant Deterioration* (1987).

An exemption from the pre-construction ambient monitoring requirements is also available if certain criteria are met. If the predicted increase in ambient concentrations, due to the proposed modification, is less than specified *de minimis* concentrations, then the modification can be exempted from the pre-construction air monitoring requirements for that pollutant. In addition, if no *de minimis* monitoring concentration is specified for a pollutant, that pollutant is exempt from the pre- construction air monitoring requirements [40 CFR 52.21(i)(8)(ii)].

No PSD *de minimis* monitoring concentration exists for VOCs, however, an increase in VOC emissions of 100 TPY or more requires analysis for O_3. The predicted increase in VOC emissions due to the proposed modification is less than 100 TPY.

4.2 Ambient Data

Ambient VOC concentrations are not monitored or regulated by the NAAQS. Rather, they are partially responsible for the secondary air pollutant, ozone, which has a NAAQS limit of 0.075 ppm 8-hr averaging time, as calculated from the fourth highest daily maximum 8-hr concentration, averaged over three years. Georgia's Department of Natural Resources – Environmental Protection Division rarely requires photochemical modeling to show compliance with ozone concentrations following VOC significant threshold exceedances. Rather, other methods to ensure NAAQS will not be exceeded can be utilized. These other methods, which oftentimes use more elementary procedures, can be used to show compliance with ozone concentrations following VOC exceedances.

The closest ambient ozone monitor to the facility is located in Leslie, Sumter County, Georgia; AIRS monitor site code of 1001. A summary of the daily maximum 8-hr ozone concentrations from a recent five year period is shown below.

Table 4.1 Various Statistical Values of Ozone Concentrations (ppb) from the Leslie, Georgia Ozone Monitor

Variable	2006	2007	2008	2009	2010
Max 8-hr Avg	50.94	49.41	43.14	37.97	45.14
Standard Deviation	11.29	12.42	13.61	10.82	10.96
5th Percentile	33.38	26.81	22.29	19.32	27.81
50th Percentile	51.38	50.21	43.00	38.75	45.44
95th Percentile	68.26	69.53	66.03	54.90	62.08

As seen in the above table, this area has reasonably stable average ozone concentrations and has, in fact, experienced ozone reductions over the last few years, likely tied to the national trend of decreasing NO_x emissions. The average maximum 8-hr ozone concentrations from 2006-2010 ranged from 37.97 – 50.94 ppb and the 95th percentile from the same time period ranged from 54.90 – 69.53 ppb. As well, Sumter County, Georgia is located in a rural portion of the State. Rural locations usually are NO_x limited, when considering ozone production. These areas are typically rich in biogenic VOC emissions, such as isoprene, and the production of ozone is largely dominated by the changes in NO_x emissions.

For Webster County, the total VOC emissions, as reported in the 2011 National Emission Inventory (NEI), was 9,679 tons; a majority of which were from biogenic sources (~93.4%). A potential to emit increase of 86.38 TPY from this project will result in a 0.89% increase, relative to the 2011 NEI reported values, in VOC emissions for Webster County. This VOC emission increase should not cause local ambient ozone concentrations to increase above NAAQS levels. In addition, as previously stated, since this facility is located in a rural region with high biogenic VOC emissions, it is likely that ozone production in the area is NO_x limited. Again, based on data from the 2011 NEI, County wide emissions for NO_x were 396 tons and VOC emissions were 9,679 tons. And, this project will not increase NOx emissions. This characteristic of Webster County gives further reliance that the slight increase in VOC emissions will have negligible effects on ozone concentrations.

5.0 BEST AVAILABLE CONTROL TECHNOLOGY ANALYSIS

5.1 Requirements

The 1977 CAA Amendments established requirements for the approval of pre-construction permit applications under the PSD program. As discussed in Section 3.2.2, one of these requirements is that BACT be installed for applicable pollutants. BACT determinations must be made on a case-by-case basis considering technical, economic, energy, and environmental impacts for various BACT alternatives. To bring consistency to the BACT process, the EPA developed the "top-down" approach to BACT determinations.

The first step in a top-down BACT analysis is to determine, for each applicable pollutant, the most stringent control alternative available for a similar source or source category. If it can be shown that this level of control is not feasible on the basis of technical, economic, energy, or environmental impacts for the source in question, then the next most stringent level of control is identified and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any technical, economic, energy, or environmental consideration.

In the case of the proposed project, the changes to the plant constitute a physical modification to the source. As a result, BACT applies to the new direct-fired dry kiln. VOC emissions from the dry kilns require a BACT analysis. The BACT analysis is presented in the following sections.

5.2 BACT Review for Volatile Organic Compounds (VOC)

GENERAL INTRODUCTION

In the process of preparing the this BACT Review Interfor reviewed the BACT review contained in Georgia-Pacific's recent application for the installation of a new Continuous Dry Kiln at their Rome, Georgia Lumber Mill which was prepared by URS. Being that their assessment deals with control equipment for Dry Kilns just as this application does, that a great deal of quality work was put into developing the assessment, the assessment is current having been prepared in March of this year, and that it is our belief that the facts relative to available control equipment for Dry Kilns have not changed since their assessment, and that Interfor agrees with their assessment, Interfor has essentially copied and adapted from the aforementioned application in the preparation of this assessment and hereby credits GP and URS for their work. The numbers developed in the following assessment are for control of one kiln producing 125,000 MBF per year, Interfor's Preston Division is changing three kilns which will be producing a total of 260,000 MBF per year so cost for Interfor would be higher than those presented in this assessment.

TECHNICAL INTRODUCTION

Pursuant to federal PSD regulation 40 CFR 52.21(j), and Georgia State air regulation 391-3-1-.02(7), any major stationary source or major modification subject to PSD review is required to include a Best Available Control Technology (BACT) analysis. As defined under the PSD regulations (40 CFR 52.21(b)(12), and adopted by reference by the Georgia Environmental Protection Division (EPD), BACT means:

> *... an emission limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation under [the] Act which would be emitted from any proposed major stationary source or major modification which the Administrator, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant. In no event shall application of best available control technology result in emissions of any pollutant which would exceed the emissions allowed by any applicable standard under 40 CFR parts 60 and 61. If the Administrator determines that technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of an emissions standard infeasible, a design, equipment, work practice, operational standard, or combination thereof, may be prescribed instead to satisfy the requirement for the application of best available control technology. Such standard shall, to the degree possible, set forth the emissions reduction achievable by implementation of such design, equipment, work practice or operation, and shall provide for compliance by means which achieve equivalent results.*

A BACT analysis is required for each new or physically modified emission unit at which there will be a net increase of a PSD-regulated pollutant. Since VOC emissions from the proposed project are the only PSD-regulated pollutant emissions to exceed the applicable PSD SER, a BACT analysis for only VOCs from modified or new units is required.

BACT DETERMINATION METHODOLOGY

The primary purpose of BACT is to optimize consumption of PSD air quality increments and thereby enlarge the potential for future economic growth without significantly degrading air quality[2]. Guidelines for the evaluation of BACT can be found in US EPA's Guidelines for Determining Best Available Control Technology (BACT) (US EPA, 1978) and in the PSD Workshop Manual (US EPA, 1990). These guidelines were drafted by the US EPA to provide a consistent approach to BACT and to ensure that the impacts of alternative emission control systems are measured by the same set of parameters. In addition, through implementation of these guidelines, BACT in one area of the country may not be identical to BACT in another area. According to US EPA (1980):

> *BACT analyses for the same types of emissions unit and the same pollutants in different locations or situations may determine that different control strategies should be applied to the different sites, depending on site-specific factors. Therefore, BACT analyses must be conducted on a case-by-case basis.*

The BACT requirements are intended to ensure that the control systems incorporated in the design of proposed or modified equipment reflect the latest in control technologies used in a particular industry and take into consideration existing and future air quality in the vicinity of the facility. BACT must, at a minimum, demonstrate compliance with NSPS for a source (if applicable). An evaluation of the air pollution control techniques and systems, including a cost- benefit analysis of alternative control technologies capable of achieving a higher degree of emission reduction than the proposed control technology, is required. The cost-benefit analysis requires the documentation of the materials, energy, and economic penalties associated with the proposed and alternative control systems, as well as the environmental benefits derived from these systems. A decision on BACT is to be based on sound judgment, balancing environmental benefits with energy, economic, and other impacts (US EPA, 1978).

In December 1987, EPA issued a policy memorandum that established a new "top-down" approach to BACT decision-making. In October 1990, EPA issued a draft "New Source Review Workshop Manual" that outlines a five-step "top-down" process to be used for all BACT assessments. EPD utilizes the same Manual for assessing BACT analyses submitted as part of PSD permit applications.

The five steps of the "top-down" review are listed briefly below and presented in the following sections in further detail.

The five steps are:

1. Identify all control technologies that have been applied to the same or similar sources for the pollutant being evaluated, listing the most stringent technology at the "top".

2. Evaluate technologies identified in Step 1 for technical feasibility starting with the most stringent. Provide basis for elimination of any technology.

3. Rank technologies deemed technically feasible by control effectiveness.

4. Evaluate and document control effectiveness for technologies listed in Step 3 including energy, environmental and economic considerations.

5. Select BACT.

STEP 1 – IDENTIFY ALL CONTROL TECHNOLOGIES

The first step in the BACT analysis is to identify all available control technologies for each new or modified emission unit and regulated pollutant required to be evaluated. The only pollutant required to be evaluated for this project is VOCs and the only modified emission unit is a direct fired batch drying kiln. Potentially applicable emission control technologies were investigated by reviewing the EPA's RACT/BACT/LAER Clearinghouse (RBLC) control technology database, technical literature, control equipment vendor information, and by using process knowledge and engineering experience. The RBLC lists control technologies that have been approved in PSD permits issued by state regulatory agencies as BACT for numerous process units. Process units in the database are grouped into categories by industry type.

A search of the RBLC database was performed to identify the emission control technologies and emission rates that were determined by permitting authorities as BACT for the wood products industry (Process Code 30.800 in the RBLC system). The results of the search indicate that no add-on control technologies have been implemented as part of a PSD or LAER permitting effort to control VOC emissions from lumber drying kilns. In addition, even though this BACT analysis is only being performed for VOCs, we have reviewed the other PSD-regulated pollutants in the RBLC and determined that no add-on control technologies have been implemented to control any other PSD-regulated pollutants for lumber drying kilns. A summary of the RBLC findings is included in Appendix E.

Interfor operates a number of lumber drying kilns across the US. None of the lumber kilns at any of Interfor's manufacturing facilities utilize controls to remove VOCs. In addition, to the best of Interfor's knowledge, no lumber kilns operating in the US utilize controls to remove VOCs.

While add-on controls have not been demonstrated for lumber drying kilns, the following control technologies have been demonstrated to remove VOC emissions for other industrial processes:

- Wet electrostatic precipitator (WESP) followed by Thermal Oxidation
- WESP followed by Catalytic Oxidation
- Condensation
- Carbon Adsorption
- Wet Scrubbing
- Biofiltration
- Proper Kiln Design and Operation

A brief description of each of the VOC control technologies listed above is provided in the following sections.

Thermal Oxidation with Use of Wet Electrostatic Precipitation

Thermal oxidizers work on the principle of reacting VOCs in an exhaust gas stream from an industrial process with oxygen in air to form naturally occurring carbon dioxide and water vapor as shown in the following chemical reaction:

$$\text{VOCs} + O_2 + \text{heat} \rightarrow H_2O + CO_2$$

This reaction occurs when the air is heated to a sufficiently high temperature, typically 1,400-1,600 °F with a residence time in the combustion chamber between one-half to one second.

Thermal oxidizers can be designed as conventional thermal units, recuperative units, or regenerative thermal oxidizers (RTOs). A conventional thermal oxidizer does not have heat recovery capability. Therefore, the fuel cost is extremely high and is not suitable for applications with high exhaust gas flow. In a recuperative thermal oxidizer, the contaminated inlet air is preheated by the combustion exhaust gas stream through the use of a heat exchanger. The preheater will recover as much as 95% of the heat, thus providing significant fuel savings as compared to a system that does not incorporate a preheater. An RTO consists of at least two separate chambers packed with ceramic media. The VOC-laden gas enters one hot ceramic bed where the gas is heated to the desired combustion temperature. Auxiliary fuel may be required in this stage, depending on the heat content of the VOCs contained in the inlet gas stream. The gas stream is directed through the other ceramic bed, where the heat released from combustion is recovered and stored in the ceramic bed. The process gas flow then is switched so that the inlet gas stream can be preheated by the heat recovered in the ceramic bed. The RTO is operated using an alternating cycle for the two ceramic beds, recovering up to 95% of the thermal energy generated by the combustion process during normal operation. RTO's have the potential to remove 99+% of VOCs from a gas stream, depending on the VOCs present in the gas stream. Based on our knowledge of the kiln exhaust (as lower VOC concentrations result in lower destruction values), it is assumed that an RTO would achieve 98% VOC destruction.

RTO performance is subject to particulate matter (PM) contained in the exhaust gas stream. Therefore an exhaust gas stream with PM loading must be removed from the exhaust gas prior to entering the RTO. The placement of WESPs ahead of an RTO has been used in the oriented strand board (OSB) industry to control PM and VOC emissions from the rotary driers. WESPs are used instead of dry ESPs when wet, sticky or flammable particulate material is collected, making it a preferred method of PM removal prior to the RTO. PM removal efficiencies of the WESP range from 90 -99+%, depending upon the design of the ESP.

Regenerative Catalytic Oxidation

Similar to an RTO, a regenerative catalytic oxidizer (RCO) oxidizes VOCs to carbon dioxide and water vapor. However, an RCO uses a metallic catalyst to oxidize the VOCs to CO_2 and water vapor, and allows the reaction to take place at a much lower temperature compared to an RTO. Oxidation of VOCs in an RCO usually takes place at temperatures ranging from 500-600 °F.

This creates the opportunity to reduce fuel expenses and material of construction costs for the RTO (since the materials of construction will be subject to much lower temperatures). The addition of a preheater will further reduce the fuel costs. These types of oxidizers are just as capable in removing

VOCs from a gas stream. VOC destruction efficiencies have the potential to be 95% or greater, depending on the type(s) of VOCs present in the exhaust gas stream. Based on our knowledge of the exhaust gases from a lumber kiln (as lower VOC concentrations result in lower destruction values), we are assuming that an RCO would achieve a minimum VOC destruction efficiency of 90%.

PM removal is even more critical for RCOs than RTOs as the catalyst may be blinded by PM build-up. Additionally, RCOs are sensitive to poisoning from heavy metals present in the exhaust gas stream. As such, PM control is required prior to the RCO. WESPs have the highest PM control efficiency for this type of system, compared to wet scrubbers or high efficiency cyclones, with a PM removal efficiency of 90-99+%, depending upon the particle size fraction of material being removed.

Condensation

Condensation systems remove VOC emissions by condensing VOCs within the exhaust gas stream by either increasing pressure or lowering the temperature of the exhaust gases. The condensed VOCs are then destroyed in a separate combustion device or the materials are recovered for sale. Condensation requires that the exhaust stream be cooled to a temperature low enough such that the vapor pressure of the exhaust gases are lower than the VOC concentration of the exhaust gases.

Carbon Adsorption

Carbon adsorption systems can potentially be used to remove VOC from exhaust gas streams. The core component of a carbon adsorption system is an activated carbon bed contained in a steel vessel. The VOC-laden gas passes through the carbon bed where the VOC is adsorbed on the activated carbon. The cleaned gas is discharged to the atmosphere. The spent carbon is regenerated either at an on-site regeneration facility or by an off-site activated carbon supplier.

One method used to regenerate spent activated carbon is by using steam to displace adsorbed organic compounds at high temperatures.

Wet Scrubbing

Scrubbing of VOCs contained in an exhaust gas stream is usually accomplished in a packed column (or other type of column) where the VOCs are absorbed by countercurrent flow of a scrubbing liquid. Scrubbing liquids include water, a caustic solution, or another liquid media that will interact to remove the VOC compounds. Wet scrubbing is most effective for water soluble VOC compounds, such as alcohols. Removal efficiencies for hydrophilic VOCs (VOCs that mix, dissolve or are wetted by water) can exceed 90%.

Biofiltration

Biofiltration is a technology where a VOC-laden exhaust stream is directed through a biologically active media. Biofiltration uses microorganisms to break down organic compounds into carbon dioxide, water, and salts. When the biofilter is built, the microorganisms are already on the material that is used as a filter bed. The filter bed material normally used is peat, soil, or compost, but granulated activated carbon and polystyrene can also be used. The choice of filter bed material is very important because it has to supply the nutrients for the microorganisms, support biological growth, and have good sorption capacity.

The biological process is an oxidation by microorganisms and can be written as follows:

$$VOC + O_2 + \text{microorganisms} + \text{nutrients} \rightarrow CO_2 + H_2O + \text{Heat} + \text{microorganisms}$$

The microorganisms live in a thin layer of moisture, or the "biofilm", which is built around the particles of the filter material. The contaminated gas stream is diffused through the biofilter and adsorbed onto the biofilm. The biofilm is the where the oxidation process actually takes place. The pollutants contained in the gas stream are not permanently transferred to the filter bed material.

Temperature, oxygen level, and pH of the exhaust gas stream affect the level of VOC removal. Microorganisms work best when the temperature is between 85 and 105 °F. Gas stream temperatures well above 105 °F will kill the bacteria contained in the filter media and thereby negate its effectiveness. Also, since most of the biological degradations are aerobic in nature, the oxygen level is very important in a biofiltration process. In fact, oxygen is not used directly in the gaseous form, but the microorganisms use the oxygen present in the dissolved form in the biofilm. The microorganisms are most efficient when the pH value is around 7. Thus, the pH level of the contaminated gas stream must be maintained at a neutral level.

Biofilters are most effective in removing water soluble VOC compounds and have demonstrated removal efficiencies for individual hydrophilic compounds such as methanol and formaldehyde that exceed 90%. Vendors claim that this technology has the capability to remove approximately 50-70% of the total VOCs emitted from a gas stream when used under favorable operating conditions of low temperature, readily available oxygen, and neutral pH conditions. Based on industry's familiarity with the operation of biofiltration units on other process units in the Building Products Industry, the control efficiency is likely much lower than the vendor claims. Stack test data from the Weyerhaeuser OSB facility in Elkin, NC, for their press show that the biofilter only achieves approximately 15 percent control of total VOCs. Stack test data from the GP Particleboard facility in Thomson, GA, for their press shows that the biofilter only achieves approximately 10 percent control of total VOCs. The aforementioned control efficiencies are based on total VOC presented on a carbon basis.

Proper Kiln Design and Operation

The naturally-occurring VOCs in the lumber are driven-off from the heat used to dry the lumber within the kiln. Lumber is dried to a specific moisture content for quality control purposes. Proper design and operation of the lumber kilns prevents over drying of the lumber that may release additional VOCs to the atmosphere. As a result, proper operation of the kilns will minimize VOC emissions to the atmosphere.

STEP 2 – ELIMINATION OF TECHNICALLY INFEASIBLE CONTROL TECHNOLOGIES

The second step in the BACT assessment is to eliminate technically infeasible control technologies. Each control technology is considered and those that are clearly technically infeasible are eliminated from further consideration in the BACT analysis. If a control technology has been installed and operated successfully on a similar emission source, then it has been demonstrated in practice and is considered technically feasible. If a control technology has not been demonstrated on a similar source, then the applicant must determine if the technology is applicable to the emission source under consideration. A control technology is eliminated from further consideration if it is shown that the technology has not been demonstrated on similar emission sources and that it cannot be applied to the emissions source under consideration.

To the best of our knowledge, no control technologies for the removal of VOC emissions have been applied to, or demonstrated for lumber kilns, or upon exhaust gas streams with a similar characteristics to the exhaust gases from lumber kilns. There are a number of inherent difficulties in designing a technically feasible control system for a lumber kiln. Because no emission control technologies have been applied to lumber kilns, actual operational and maintenance problems are not fully understood. Basic technical challenges identified with controlling lumber kilns with the use of several potential control technologies, are categorized as follows:

- Exhaust gas collection; and
- Collection and treatment of condensate

The next two sections address the technical challenges listed above and how these challenges affect the ability of applying emission controls to lumber kilns. The following sections provide detailed discussions for each control technology with regards to technical challenges to control VOC emissions from the lumber kilns.

Exhaust Gas Collection

Drying within direct fired lumber kilns is facilitated by combustion air from a wood-fired burner (this unit uses a sawdust burner) mixed with circulating air in a blend chamber. A centrifugal blower forces the heated air through a duct to a plenum that distributes the air to circulating fans inside the kiln. The heated air transfers moisture from the lumber to the air that is circulated throughout the kiln. The process exhaust air (including products of combustion from the direct-fired burner and VOCs from lumber drying) are vented through the roof vents located just above the kiln. Combustion air flow and temperature must be controlled to maintained the humidity and temperature gradient process conditions required for proper heat transfer and conditioning of the wood.

Collection and Treatment of Condensation

The process air both within and exhausted from the kiln has a relative humidity of 100%. While the drying section within the kiln may reach temperatures up to 250 °F, the temperature of the exhaust gases from both of the kiln ends and exhaust stacks is typically between 110 °F and 150 °F. If the temperature of the process exhaust gas stream is not maintained, the exhaust gases will cool as they flow from the exhaust stack through the ductwork to a chosen control device. As the temperature of the process exhaust gas is reduced, water and VOC constituents from the process air will condense and be deposited on the inside of the ductwork. Condensation on the ductwork poses several problems including the quantity of water generated, the weight of the water buildup, and the buildup of “stickies” from the condensation of VOC compounds. The lumber enters the kiln with a moisture content of approximately 48% and is dried to a moisture content of approximately 13%. An estimated 0.23 gallons of water per board foot is removed from southern yellow pine during the drying process[4]. For a kiln that processes 85,000 MBF per year, a total of approximately 20 million gallons per year of water will be removed. The weight of the condensate generated could cause the exhaust ductwork to collapse without extensive design and support and a drainage system to capture and discharge the condensate to a treatment system. Handling, treating and discharging this quantity of condensate is considered technically infeasible for many of the lumber kilns Interfor operates for several reasons. First of all, all of the facilities are designated as zero discharge facilities. Secondly, most do not have an onsite wastewater treatment facility (WWTF) to treat the condensate or access to a publicly-owned treatment works (POTW) to dispose of the condensate.

In addition to the quantity and weight of condensate buildup in the exhaust ductwork, kiln condensate is very “sticky” due to the presence of resinous compounds in the exhaust gases, and points of condensation will, over time, build-up and could cause severe blockages and malfunctions of dampers and ductwork connections. The quantity of “stickies” that might build- up is unknown, but severe control system malfunctions are likely as well as a large amount of time and labor expended to clean out the build-up of sticky material, based on previous and current experience within our wood products facilities. Also, stickies are very flammable and would require a robust fire detection and suppression system within the ductwork to prevent fires that could be caused by a spark from the direct fired kiln.

To avoid generating a large quantity of condensate (containing both water and stickies), that would otherwise be considered technically infeasible to manage, Interfor proposes to heat the process air exiting the kiln stacks to a temperature above the point of condensation. Based on previous experience with condensation within wood products industry it appears that the process air captured from the kiln stacks would need to be heated to a minimum of 220 °F in order to capture and treat VOCs in the exhaust gas stream.

Wet Electrostatic Precipitation Followed by Thermal Oxidation

As previously mentioned, RTO performance can be affected by particulate matter contained in the exhaust gas stream. Therefore, particulate matter emissions must be removed from the exhaust gas stream prior to entering the RTO. Particulate matter emissions from the direct fired burner supplying heat to the dryer could lead to bed fouling, performance degradation or fires as the particulate becomes entrained on the media bed. Depending on design of the media, particulate buildup could lead to media bed plugging, blocking airflow through the media bed, resulting in an increase pressure drop. This in turn will require the exhaust fan to work harder and consume more energy. Fouling of the media bed reduces the effectiveness of the unit’s ability to transfer heat. At the same time, the buildup of particulate matter presents a serious fire hazard (especially in the presence of “stickies” generated by heating the wood).

To minimize the PM build-up in the media bed, WESPs placed ahead of the RTO is one method currently being used in several OSB facilities to control PM and VOC emissions from rotary dryers. Bed fouling is still an issue, even with a WESP situated ahead of the RTO on a direct fired dryer unit.

The bed fouling led to a shortened media life that required complete replacement of the media more frequently than expected. While bed fouling over the course of operation does not render the operation of a WESP/RTO technically infeasible, it does add to the cost of operating the unit, which will be addressed further under Step 4 of this BACT analysis.

Wet Electrostatic Precipitation & Catalytic Oxidation

PM removal is even more critical for RCOs than RTOs as the catalyst may be blinded by the build-up of PM. RCOs are also sensitive to poisoning by heavy metals that may be contained in the exhaust gas stream. As such, PM removal is necessary in order to prevent blinding of the catalyst inside of the RCO. Blinding of the catalyst occurs when PM coats the catalyst, thereby preventing the coated sections of the catalyst from aiding in the oxidation of VOCs in the exhaust gas stream. The RCO catalyst is also sensitive to poisoning with exhaust gas streams that contain silicon, phosphorous, arsenic and any other heavy metals. While blinding by PM may be reversed by burning off the PM, poisoning requires replacement of the catalyst as the metals become chemically bound to the active surface which reduces the total surface area capable of promoting oxidation. The catalyst vendor stated that the catalytic oxidation is not a viable control technology for this type of gas stream due to the PM, metals and acidic content of the exhaust gas even with the ESP. Based on this analysis, this control technology is considered technically infeasible and will not be discussed any further.

Condensation

Condensation requires that the exhaust stream be cooled to a temperature low enough such that the vapor pressure of the exhaust gases are lower than the VOC concentration of the exhaust gases. The primary constituent of the VOC in the exhaust gas stream from the lumber kilns is terpenes, which would require the temperature of the exhaust stream to be lowered to well below 32°F in order to have a low enough vapor pressure to use condensation. A temperature of 32°F would cause the water vapor in the stream to freeze, and the resulting ice particles would clog the unit. As such, we do not believe that condensation is technically feasible to control VOC emissions from a lumber kiln.

Carbon Adsorption

Carbon adsorption systems work on the principle that VOC within the exhaust gas condenses on the surface of the adsorbent. Once the surface has adsorbed all the VOC it can, the VOC is desorbed to generate the adsorbent. Humidity within an exhaust gas has a noticeable effect on the absorption of VOC, particularly in gas streams with high humidity as the water vapor will condense on the adsorbent in addition to the VOC. One study reported desorbing of VOC from the carbon as water displaced the VOC.[5] As previously mentioned, exhaust gas from the kiln has a relative humidity of 100%; therefore the humidity of the exhaust gas will compete with VOC adsorption and greatly reduce the VOC control of the unit.

Although some VOCs can be desorbed with the use of a chemical treatment, terpenes, the primary VOC constituent in kiln exhaust gases, must be thermally desorbed. As a result, the temperature necessary for desorption are excessively high and would likely damage any commercially-available adsorption media. Adsorption capacity of a carbon system is higher with lower temperature exhaust since desorption takes place near the boiling point of the VOC within the exhaust gas. As previously mentioned, Interfor proposes that heating the exhaust gas above 220 ˚F to prevent condensing of the gas stream in the ductwork would be required. This temperature is above the boiling point for some of the VOC components within the exhaust gas (e.g. formaldehyde and methanol) and nears the boiling point of pinenes and terpenes. Therefore, VOC control is expected to be greatly reduced at this high exhaust temperature. It is also likely that the “stickies” contained in the kiln exhaust gas stream would plug the activated carbon bed with a build-up of condensable PM. Based on all of these reasons, this control technology is considered technically infeasible and will not be discussed further.

Wet Scrubbing

Wet scrubbing is most effective for exhaust gas streams that contain water soluble VOC compounds, such as methanol. However, the primary VOC constituents of kiln exhaust gases, pinenes and terpenes, are not water soluble. Therefore, these constituents would not be easily adsorbed in a wet scrubber, and the VOC removal efficiency would be quite low, on the order of 10-20%. In addition, the viscous nature of the “stickies” within the exhaust gas will easily plug the absorption media. Therefore, this control technology is considered technically infeasible.

Biofiltration

To the best of our knowledge, no vendor has designed a biofiltration system to remove VOC emissions from an exhaust gas stream with characteristics similar to those of a lumber kiln. As previously discussed, to prevent condensation and the buildup of “stickies” inside of the exhaust ductwork between the kiln and control equipment, Interfor believes it would be necessary to heat the kiln exhaust gases to temperatures above that which condensation would occur (220F+). Gas stream temperatures well above 105 °F would kill the bacteria contained in the filter media of the biofilter and thereby render the system ineffective.

As previously mentioned, the primary constituent in the exhaust gas is terpene, which is a long-chained hydrocarbon that is highly water insoluble. Not only is it expected that the biofilter will be ineffective at breaking down terpene, the highly viscous nature ("sticky") of this VOC is expected to build up within the biofilter bed and plug the media. The use of biofiltration to remove VOCs from a lumber kiln exhaust gas stream is therefore deemed technically infeasible and is not considered further in this BACT analysis.

STEP 3 – RANKING OF CONTROL TECHNOLGIES BY CONTROL EFFECTIVENESS

Although we are not certain whether or not it is technically feasible to capture and transport kiln exhaust gases to a pollution control system for the reasons outlined in above, we are considering the use of a WESP followed by an RTO in more detail to assure that we have thoroughly examined all possible control technologies as part of this BACT analysis. A summary of the VOC control efficiencies of the remaining technically feasible control technologies, ranked in order of decreasing control effectiveness, is presented below:

- RTO = 98 percent;
- Work Practices = base case.

STEP 4 - EVALUATION OF CONTROL TECHNOLOGIES

The fourth step in the top-down BACT assessment is to evaluate the cost effectiveness of the control technologies that are were not eliminated in Step 2 and document the results.

Cost effectiveness evaluations were prepared for each of the technically feasible control technologies identified above for lumber kilns. These evaluations were performed using EPA's "Air Pollution Control Cost Manual" as described in the following paragraphs.[7]

The Manual provides detailed engineering information that reflects the latest innovations in the industry and costing information that is up-to-date and relevant. The cost information in the Manual provides a rough "order of magnitude" cost estimate, nominally accurate to within ± 30%. The Manual provides capital and annual operating costing procedures and data for several different types of pollution control systems. Following is a summary of the information we used to prepare the cost effectiveness evaluations for removing VOC emissions from lumber kiln exhaust gas streams.

The Total Purchased Equipment Cost represents the delivered cost of the control equipment, auxiliary equipment, and instrumentation. Auxiliary equipment consists of all the structural, mechanical, and electrical components required for the efficient operation of the control device. Auxiliary equipment costs are estimated as a straight percentage of the equipment cost using factors from the Manual. Direct installation costs consist of the direct expenditures for materials and labor for site preparation, foundations, structural steel, equipment erection, piping, electrical work, and painting. Indirect installation costs include engineering and supervision of contractors, construction and field expenses, contractor construction fees, and engineering contingencies. Other indirect costs include equipment startup, performance testing, working capital, and interest costs during construction.

Annual operating costs are comprised of both direct and indirect operating costs. Direct annual operating costs include labor, maintenance, replacement parts, raw materials, utilities (including fuel costs, electricity costs, process water costs, wastewater treatment costs, compressed air costs, etc.), and waste disposal. Indirect annual operating costs include plant overhead, taxes, insurance, general administration, and charges for capital. Replacement part costs, such as the cost of replacement catalysts, were included where applicable, while raw material costs were estimated based upon the unit cost and the annual consumption. With the exception of overhead, indirect operating costs were calculated as a percentage of the total capital costs. The indirect capital costs were based on the capital recovery factor (CRF) which is defined as:

$$CRF = \frac{i(1+i)^n}{(1+i)^n - 1}$$

where i is the annual interest rate and n is the life of the control equipment, in years. The control equipment life is based on the normal life of the control equipment and is set at 20 years for the control options evaluated.

These costs have been used in the preparation of the cost effectiveness analyses for the remaining technically feasible control technologies.

Economic Costs

The control technologies considered in the analysis cause significant economic impacts. It is also likely that the costs included in this BACT analysis are underestimated due to difficulty of accurately estimating a system that has not been demonstrated in practice. Unknown maintenance and operational problems due to the unique characteristics of lumber kiln exhaust gases could result in higher costs than those presented in this Step of the BACT analysis.

RTO

The cost of controlling VOCs with an RTO is estimated at greater than $40,000 per ton of VOC removed for Kiln 3, and greater than $24,000 separately for Kilns 4 and Kiln 5. This cost effectiveness value is largely due to the high moisture content and low exhaust temperature, of the kiln exhaust gas stream as the cost to heat the water vapor contained in the exhaust gas stream to the operating temperature of the RTO requires a significant quantity of natural gas. Based on the high cost effectiveness for removing VOCs from a lumber kiln, Interfor does not believe it is economically feasible to use this control technology. The detailed cost analysis for controlling Kilns 3, 4, and 5 separately are included in Appendix C.

Note – that the proposed project is not triggering a major modification for PM emissions and therefore a separate BACT evaluation for the WESP (identified as needed for PM controls prior to the RTO from the high moisture exhaust stream)

Environmental Impacts

There would also be associated energy and environmental impacts resulting from use and combustion of natural gas in the RTO. The combustion of natural gas as an auxiliary fuel would create additional NO_X , CO, and CO_2 emissions. The creation of these emissions simply to reduce VOC emissions is a negative environmental effect, as the combustion of natural gas increases the potential of increasing ozone formation.

Reduction of VOC, and small amounts of HAPs and TAPs, would have a negligible impact on air quality in the vicinity of the facility. Under the PSD program, VOCs are regulated to prevent significant deterioration of air quality due to ozone formation. Ozone is formed in the atmosphere due to atmospheric chemical reactions of NOx and VOC catalyzed by sunlight, and excessive ambient concentrations of ozone in the lower atmosphere can be injurious to health and damage vegetation. The facility is located in a lightly populated and developed area of Georgia and ambient concentrations of ozone in this area are in attainment with the NAAQS for this pollutant. Moreover, it should also be noted that VOC emissions from the lumber kilns are small compared to the biogenic (naturally occurring) VOC emissions from forests in the vicinity of the facility and, consequently, any reduction of VOC emissions from the lumber kilns will have a negligible effect upon ozone formation and concentrations in the area while an increase in NOx concentrations generated by the control equipment could actually increase ozone levels.

Energy Impacts

The control technologies require energy to operate fans to move the exhaust gases through a significant amount of ductwork requiring over 700,000 KWH of electricity per year for a WESP/RTO control system. The RTO also requires the use of supplemental fuel to maintain the appropriate combustion temperature (~ 36,751 MMBtu per year for RTO control).

Proper Kiln Design and Operation

The only economically cost effective control technology for removing VOC emissions from a direct fired lumber kiln is the use of "proper design and operating practices". Since this control option is the top BACT control technology, a cost effectiveness evaluation is not required.

5.2.1 STEP 5 - BACT SELECTION

Results of the top-down BACT analysis indicate that there are no demonstrated control techniques in practice, numerous technical challenges, and no cost-effective control technologies for removing VOC emissions from lumber drying kilns and, consequently, the BACT proposed for the lumber kiln is "no control" with the use of "proper design and operating practices". Interfor proposes a VOC emission limit of 3.86 lb/MBF (VOC as terpene + methanol + formaldehyde) as BACT[9]. This BACT limit applies during all operating conditions as there are no significant changes to the VOC emissions generated by the kilns during startup and shutdown compared to normal operation.

The proposed BACT work practices for the lumber kiln consist of (1) proper kiln maintenance and (2) minimizing over-drying while meeting the relevant lumber moisture specifications (target final lumber moisture content of 12 percent or greater as measured at the planer mill).

Limiting over-drying has a direct impact on the minimization of VOC emissions. The VOCs emitted from southern pine lumber drying consist of approximately 80-90 percent terpenes and pinenes which are native compounds in the wood. Emissions of these compounds are largely proportional to the amount of moisture removed from the lumber as it is dried inside of the kilns.

Interfor proposes to demonstrate compliance with these work practices by measuring the moisture content of the lumber as it comes out of the planer machine.

In addition to monitoring moisture content, following a preventative maintenance plan will assist in minimizing VOC emissions. Proper maintenance of kiln equipment ensures optimal drying conditions which minimizes the possibility of over-drying. Interfor proposes to develop and implement a maintenance plan within 180 days of start-up of the kiln. The development of site specific maintenance plans for proper kiln maintenance is consistent with recent BACT determinations in EPA Region 4.

Interfor requests that the specific conditions of the maintenance plan not be incorporated directly into the permit to allow for greater operational flexibility however, Interfor is willing to make the maintenance plan available to GA EPD upon request.

Table 5-1

RBLC Search Results for Direct-Fired Lumber Kilns Comprehensive Report Date:09/28/2015

Range of Permit Dates	2005-2015
Equipment Description	Direct Fired Lumber Drying Kilns
Pollutant of Concern	VOC
Appropriate Controls as determined by agencies: 5 determinations of Proper maintenance and operation 1 determination of Proper temperature and proper management and drying to appropriate moisture content 1 determination of Proper design and operation 2 determinations of No Control	

6.0 ADDITIONAL IMPACT ANALYSIS FOR THE VICINITY OF THE INTERFOR PRESTON SAWMILL

6.1 Impacts to Soils, Vegetation, and Visibility in the Vicinity of the Interfor Preston Sawmill

6.1.1 Predicted Air Quality Impacts

Due to the small decreases in emissions of multiple pollutants and a small increase in VOC emissions the project is not expected to have any significant impacts on the ambient concentrations of pollutants.

6.1.2 Impacts to Soils

Air contaminants can affect soils through fumigation by gaseous forms, accumulation of compounds transformed from the gaseous state, or by the direct deposition of PM to which certain contaminants are absorbed. Webster County is within parts of two Major Land Resource Areas: the Southern Coastal Plain (133A) and the Carolina and Georgia Sand Hills (137). Most of the soils of the Southern Coastal Plain are well drained and on uplands. The soils on the low, nearly level flood plains and terraces are loamy and range from well drained to poorly drained. Slopes are mainly 0 to 15 percent. The northern part of Webster County is in the Carolina and Georgia Sand Hills Major Land Resource Area. The soils of the Carolina and Georgia Sand Hills are mainly well drained or somewhat excessively drained. They have a sandy surface layer and a loamy subsoil or have a sandy surface layer, a sandy subsurface layer, and a loamy subsoil. The landscape is nearly level to moderately steep. Slopes range from 0 to 6 percent in the more nearly level areas and from 10 to 25 percent in the steeper areas. Surface relief ranges from almost level, undulating, and gently sloping to rolling and hilly. Good surface drainage prevails, except for some small depressions and large areas along the streams.

According to the Webster County Soil Survey, the soils in the vicinity of the Interfor Sawmill are dominated by Kinston and Bibb soil.

Kinston and Bibb soils – This soil is nearly level. Typical vegetation includes loblolly pine, slash pine, eastern cottonwood, and yellow poplar.

Typically the upper part of Kinston soil is dark grayish brown loam approximately 6 inches thick, while the lower portion to a depth of approximately 23 inches is gray sandy loam with yellowish brown and brownish yellow mottles. From approximately 23 inches to 48 inches, Kinston soil is gray sandy clay loam that has strong brown, yellowish red, and pale brown mottles. From approximately 48 inches to 63 inches, Kinston soil is grayish brown sandy loam that has yellowish brown and pale brown mottles. This soil has a high water table except during extended dry periods. The available water capacity is high, permeability is moderate, and natural fertility is low.

Typically the upper part of Bibb soil is very dark grayish brown loam approximately 6 inches thick, while the lower portion to a depth of approximately 14 inches is light brownish gray fine sandy loam. From approximately 14 inches to 43 inches, Bibb soil is light brownish gray sandy loam that has yellowish brown and brown mottles. From approximately 43 inches to 63 inches, Bibb soil is gray loamy sand that has yellowish brown and pale brown mottles. This soil has a high water table except during extended dry periods. The available water capacity is high, permeability is moderate, and natural fertility is moderately low to moderate.

The maximum O_3 concentrations in the vicinity of the site are currently below the AAQS (refer to Section 4.2). The proposed project represents approximately a 0.89 percent increase in regional VOC emissions (refer to Section 6.1.3). Therefore, the effects of O_3, as a result of VOC emissions from the proposed project, are expected to be insignificant, and no detrimental effects on soils should occur in the vicinity of the Interfor Preston Sawmill.

6.1.3 Impacts to Vegetation

In general, the effects of air pollutants on vegetation occur primarily from SO_2, NO_2, O_3, and PM. Effects from minor air contaminants such as fluoride, chlorine, hydrogen chloride, ethylene, ammonia, hydrogen sulfide, CO, and pesticides have also been reported in the literature. The effects of air pollutants are dependent both on the concentration of the contaminant and the duration of the exposure. The term "injury," as opposed to damage, is commonly used to describe all plant responses to air contaminants and will be used in the context of this analysis. Air contaminants are thought to interact primarily with plant foliage which is considered to be the major pathway of exposure. For purposes of this analysis, it was assumed that 100 percent of each air contaminant of concern is accessible to the plants.

Injury to vegetation from exposure to various levels or air contaminants can be termed acute, physiological, or chronic. Acute injury occurs as a result of a short-term exposure to a high contaminant concentration and is typically manifested by visible injury symptoms ranging from chlorosis (discoloration) to necrosis (dead areas). Physiological or latent injury occurs as the result of a long-term exposure to contaminant concentrations below that which results in acute injury symptoms. Chronic injury results from repeated exposure to low concentrations over extended periods of time, often without any visible symptoms, but with some effect on the overall growth and productivity of the plant. In this assessment, 100 percent of the particular air pollutant in the ambient air was assumed to interact with the vegetation. This is a conservative approach.

VOC Emissions and Impacts on O3

It is difficult to predict what effect the proposed project's emissions of VOC will have on ambient O3 concentrations from either a local or regional scale. VOC and NO_X emissions are precursors to the formation of O3. O3 is formed down-wind from emission sources when VOC and NO_X emissions from the facility react in the presence of sunlight. Background (without man-made sources) ambient concentrations of O3 are normally in the range of 20 to 39 $\mu g/m^3$ (0.01 to 0.02 ppm) (Heath, 1975).

O3 can cause various damage to broad-leaved plants including: tissue collapse, interveinal necrosis and markings on the upper surface of leaves known as stippling (pigmented yellow, light tan, red brown, dark brown, red, or purple), flecking (silver or bleached straw white), mottling, chlorosis or bronzing, and bleaching. O3 can also stunt plant growth and bud formation. On certain plants such as citrus, grape, and tobacco, it is common for leaves to wither and drop early. A literature review suggests that exposure for 4 hours at levels of 0.04 to 11.0 ppm of O3 will result in plant injury for sensitive plants. The extent of the injury depends on the plant species and environmental conditions prior to and during exposure.

For Webster County, the total VOC emissions, as reported in the 2011 National Emission Inventory (NEI), was 9,679 tons; a majority of which were from biogenic sources (~93.4%). The maximum VOC emissions increase from the facility changes are 86.38 TPY, which represents a 0.89 percent increase in regional VOC emissions. Therefore, no adverse effects on vegetation due to the project's VOC emissions are expected.

6.1.4 Impacts Upon Visibility

Sources of air pollution can cause visible plumes if emissions of PM_{10} and NO_X are sufficiently large. A plume will be visible if its constituents scatter or absorb sufficient light so that the plume is brighter or darker than its viewing background (e.g., the sky or a terrain feature, such as a mountain). PM_{10} and NOx are decreasing with this project so, no adverse impacts upon visibility in the vicinity of the site are expected to occur.

7.0 ADDITIONAL IMPACT ANALYSIS ON THE CLASS I AREAS

7.1 Introduction

There are not any Class 1 areas within 200 kilometers of Interfor's Preston sawmill so this section is not applicable.

8.0 Air Toxics Modelling

8.01 Preface

In the 1977 Clean Air Act, Congress standardized the use of model applications for regulatory purposes. The Guideline on Air Quality Models, as outlined in Appendix W to Part 51, was first published in April 1978 to satisfy these requirements by specifying models and providing guidance for their use. Since that time, the guidelines have been updated, as needed, and provide a common basis for estimating concentration of criteria pollutants. These values are frequently needed while assessing control strategies and developing emission limits for industrial facilities.

The guidelines outlined in Appendix W to Part 51 recommend specific techniques to be used when making revisions to State Implementation Plan (SIP) and during new source reviews (NSR), including the prevention of significant deterioration (PSD). These techniques include, but are not limited to, model selection, input determinations, and methods of analysis. However, prior to the use of models to determine potential impacts, the guidelines first recommend a relatively coarse assessment, or screening techniques, to determine if a modeling project is necessary. These screening techniques may eliminate the need of more detailed modeling for sources that clearly will not cause or contribute to ambient concentrations in excess of either the National Ambient Air Quality Standards (NAAQS) or the allowable prevention of significant deterioration (PSD) concentration increments. If a screening technique indicates that the concentration contributed by the source exceeds the PSD increment or the increment remaining to just meet the NAAQS, then the proper air quality modeling steps will follow.

This second level consists of analytical techniques that provide a more detailed treatment of the physical and chemical atmospheric processes. These models typically consist of air dispersion models or photochemical models. For these two modeling techniques, the EPA has developed, and continues to maintain, two separate models that are available for use in such scenarios; these models include AERMOD and CMAQ for air dispersion modeling and photochemical modeling, respectively. These models, and their potential use for this project, will be further analyzed below.

An air quality analyses for SO_2, PM_{10}, CO, Pb, and NO_2 are required to determine if the source will (1) cause a violation of the NAAQS, or (2) cause or contribute to air quality deterioration greater than the specified allowable PSD increment. For the former, background concentrations must be added to the modeled impact of the subject source to account for impacts of off-site sources not included in the model to determine the design concentration. For the latter, the design concentration includes impact from all increment consuming sources. For some state agencies, an analysis of Toxic Air Pollutants (TAPS) emissions must be considered for certain projects. For the state of Georgia, PSD Permit Application Guidance[3] states that all PSD projects must include an assessment for compliance with TAP emissions and ambient effects. This assessment is recommended to follow EPD's Guideline for Ambient Impact Assessment of Toxic Air Pollutant Emissions[4]. These steps are as follows:

1. Determine the acceptable ambient concentrations (AAC) for each TAP,
2. Conduct a dispersion modeling analysis to determine an ambient air concentration of each TAP, and
3. Compare the modeled concentration to the AAC.

Air quality modeling analyses should use the period of meteorological input data recommended by Subpart W (e.g., 5 years of National Weather Service (NWS) data or at least 1 year of site specific data). From there, the design concentration based on the concentration during the respective averaging period over the entire receptor network for each year modeled should be used to determine emission limitations to assess compliance with the NAAQS, PSD increments and/or AACs for TAPs. In addition, certain pollutants have unique averaging periods that must be considered. For example, for the 24-hour PM_{10} NAAQS, which is a probabilistic standard, multiple years must be modeled, and they collectively represent a single period. Thus, if 5 years of NWS data are modeled, then the highest sixth-high concentration for the whole period becomes the design value. And in general, when n years are modeled, the $(n+1)^{th}$ highest concentration over the n-year period is the design value, since this represents an average or expected exceedance rate of one per year.

8.02 Air Quality Modeling Determination

Emissions from a new project at the Interfor Facility in Preston, Georgia require an assessment for compliance to be conducted in accordance with the EPD TAP modeling procedures. The calculations for this assessment were carried out by PLE Consulting and forwarded to Koogler & Associates, Inc. for toxic air pollutant dispersion modeling. The pollutants of concern include methanol, formaldehyde, phenol, acetaldehyde, acrolein, propionaldehyde, methyl isobutyl ketone (MIK), benzene, o-xylene, and toluene. To carry out an

[3] Georgia EPD, "*Georgia EPD Permit Application Guidance Document*", September 18, 2012
[4] Georgia EPD, "*Guideline for Ambient Impact Assessment of Toxic Air Pollutant Emissions*" June 21, 1998

adequate determination of the increases these TAPs may contribute to surrounding air quality, air dispersion modeling was carried out. This modeling effort utilized EPA's AERMOD model, with the v.15181 executable.

AERMOD, which was developed by the AMS/EPA Regulatory Model Improvement Committee (AERMIC), employs best state-of-practice parameterizations for characterizing the meteorological influences and dispersion of emissions from stationary sources. The model utilizes a probability density function (pdf) and the superposition of several Gaussian plumes to characterize the distinctly non-Gaussian nature of the vertical pollutant distribution for elevated plumes during convective conditions; otherwise the distribution of the plume is traditionally Gaussian. Also, nighttime urban boundary layers (and plumes within them) have the turbulence enhanced by AERMOD to simulate the influence of the urban heat island. AERMOD has been evaluated using a variety of data sets and has been found to perform better than other antiquated dispersion models, such as ISC3, for many applications.

The *Guideline for Ambient Impact Assessment of Toxic Air Pollutant Emissions* (The Toxics Guideline referenced above) provides a detailed methodology for determining the acceptable ambient concentrations (AAC) for each toxic air pollutant. For this assessment, the AAC values used were obtained from the GA EPD AAC database and a recently submitted application that GA EPD referenced in pre-modeling conversations[5,6].

8.02.a Model Inputs

1. Terrain

Based on data from the 2010 U.S. census, the population density of Preston, Georgia, where the facility is located, is 38.7 people/km^2. At this density and based on the procedures outlined in Appendix W to Part 51, rural dispersion coefficients should be used (<750 people/km^2). In addition, the terrain elevations for the project utilized the National Elevation Dataset terrain data files form the United States Geological Survey. The *.tif file associated featuring the terrain data used is contained in the zipped digital files that are also included in this submission.

5 http://epd.georgia.gov/air/documents/ssppmodelingaac-spreadsheet
6 Georgia-Pacific Wood Products LLC PSD Permit Application submitted to GA EPD in March 2015. Title V Permit No. 2421-115-0016-V-04-0; Facility ID No. 04-13-115-00016

2. Sources

PLE Consulting determined that three emission sources from this facility would be emitting TAPs to the atmosphere. These sources include Dry Kiln 03, Dry Kiln 04, & Dry Kiln 05 (referenced as DK03, DK04, and DK05 from henceforth, respectively). The emissions from each of these kilns come from four emission points for modeling purposes. These emission points are modeled as a single stack and a single door on each end of the kiln buildings. In reality, there are two doors on each end of the kiln, the doors are the same size and very close together so they are modeled as if there were one discharge point utilizing the combined area from both doors. The stack heights, diameters, gas exit temperatures, and gas exit flow rates of these emission points are shown in the table below. As indicated in conversations with GA EPD, dispersion modeling should include facility-wide emissions, and not just project based emission increases. In such a scenario, background concentrations do not need to be considered.

The location, release height, gas exit temperature, stack inside diameter, gas exit flow rate, and gas exit velocity for each source is summarized in the table below. Previous guidance from GA EPD suggested that the emissions from units similar to DK03, DK04, and DK05 be split on an 80/20 basis, with 80% of the emissions being discharged from the stacks and 20% of the emissions being discharged out the kiln doors. As such, this project utilized these configurations.

Source ID	X,Y UTM Coordinates [m]	Release Height [ft.]	Gas Exit Temperature [F]	Stack Inside Diameter [ft]	Gas Exit Flow Rate [ft^3/min]
DK03a	736680, 3547417	35	140	2	7,135
DK03b	736720, 3547399	35	140	2	7,135
DK03ad	736680, 3547417	8	140	19.15	1,784
DK03bd	736720, 3547399	8	140	19.15	1,784
DK04a	736646, 3547376	35	140	2	10,924
DK04b	736704 3547350	35	140	2	10,924
DK04ad	736646, 3547376	8	140	19.15	2,731
DK04bd	736704 3547350	8	140	19.15	2,731
DK05a	736634, 3547341	35	140	2	10,924
DK05b	736692,	35	140	2	10,924

	3547316				
DK05ad	736634, 3547341	8	140	19.15	2,731
DK05bd	736692, 3547316	8	140	19.15	2,731

The TPY emission rate and the effective pound per hour emission rate that was used *for each emission point* for each of the modeled TAPs from DK03, DK04, and DK05 is summarized in the following three tables.

Pollutant	DK03 [TPY]	DK04 [TPY]	DK05 [TPY]
Methanol	5.76	9.60	9.60
Formaldehyde	1.77	2.95	2.95
Phenol	0.31	0.52	0.52
Acetaldehyde	1.26	2.10	2.10
Acrolein	0.18	0.30	0.30
Propionaldehyde	0.09	0.15	0.15
MIK	0.07	0.11	0.11
Benzene	0.01	0.02	0.02
o-Xylene	0.01	0.01	0.01
Toluene	0.00	0.01	0.01

Pollutant	DK03a [lb/hr]	DK03b [lb/hr]	DK04a [lb/hr]	DK04b [lb/hr]	DK05a [lb/hr]	DK05b [lb/hr]
Methanol	0.5260	0.5260	0.8767	0.8767	0.8767	0.8767
Formaldehyde	0.1616	0.1616	0.2694	0.2694	0.2694	0.2694
Phenol	0.0283	0.0283	0.0475	0.0475	0.0475	0.0475
Acetaldehyde	0.1151	0.1151	0.1918	0.1918	0.1918	0.1918
Acrolein	0.0164	0.0164	0.0274	0.0274	0.0274	0.0274
Propionaldehyde	0.0082	0.0082	0.0137	0.0137	0.0137	0.0137
MIK	0.0064	0.0064	0.0100	0.0100	0.0100	0.0100
Benzene	0.0009	0.0009	0.0018	0.0018	0.0018	0.0018
o-Xylene	0.0009	0.0009	0.0009	0.0009	0.0009	0.0009
Toluene	0.0000	0.0000	0.0009	0.0009	0.0009	0.0009

Pollutant	DK03ad [lb/hr]	DK03bd [lb/hr]	DK04ad [lb/hr]	DK04bd [lb/hr]	DK05ad [lb/hr]	DK05bd [lb/hr]
Methanol	0.1315	0.1315	0.2192	0.2192	0.2192	0.2192
Formaldehyde	0.0404	0.0404	0.0674	0.0674	0.0674	0.0674
Phenol	0.0071	0.0071	0.0119	0.0119	0.0119	0.0119
Acetaldehyde	0.0288	0.0288	0.0479	0.0479	0.0479	0.0479
Acrolein	0.0041	0.0041	0.0068	0.0068	0.0068	0.0068
Propionaldehyde	0.0021	0.0021	0.0034	0.0034	0.0034	0.0034
MIK	0.0016	0.0016	0.0025	0.0025	0.0025	0.0025
Benzene	0.0002	0.0002	0.0005	0.0005	0.0005	0.0005
o-Xylene	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
Toluene	0.0000	0.0000	0.0002	0.0002	0.0002	0.0002

3. Receptors

A fenceline receptor grid was utilized, with spacing every 50 meters along the boundaries of the facility. From there, additional receptors were added, extending from the facility boundaries, to determine if the points of maximum concentration occurred along the fenceline or at some other location near the facility. These receptor extensions featured three "tiers." The first tier extended from the fenceline to 100 meters from the property, with receptors placed every 25 meters. The second tier extended from 100 meters from the property to 200 meters from the property, with receptors placed every 50 meters. The third tier extended from 200 meters from the property to 400 meters from the property, with receptors placed every 100 meters. Results indicated that the maximum TAP concentrations consistently occurred along the fenceline and not at an extended distance from the property. Also to note, no receptor values within the boundaries of the facility were included in the submission files.

4. Meteorological Input Data

The meteorological input data was retrieved for the Georgia Department of Natural Resources, Environmental Protection Division, Air Protection Branch website. For Webster County, it is suggested that the KCSG (KFFC) surface air station (upper air station) data files from Columbus Metropolitan Airport, GA (Peachtree City-Falcon Field, GA) for 2014-2014 are provided. As such, those meteorological data were used.

5. AAC Values

As previously stated, the AACs used in this analysis came from two sources[7,8]. A summary of the AACs, for each of the modeled pollutants, follows:

Source ID	15-Minute AAC [μg/m^3]	24-Hour AAC [μg/m^3]	Annual AAC [μg/m^3]
Methanol	32,800	619	NA
Formaldehyde	245	NA	1.1
Phenol	6,000	45.2	NA
Acetaldehyde	4,500	NA	4.55
Acrolein	23	NA	0.15
Propionaldehyde	NA	NA	8

[7] http://epd.georgia.gov/air/documents/ssppmodelingaac-spreadsheet
[8] Georgia-Pacific Wood Products LLC PSD Permit Application submitted to GA EPD in March 2015. Title V Permit No. 2421-115-0016-V-04-0; Facility ID No. 04-13-115-00016

MIK	30,700	NA	3,000
Benzene	1,600	NA	0.13
o-Xylene	65,500	NA	100
Toluene	113,000	NA	5,000

6. Air Quality Modeling Results

The dispersion modeling results from this analysis are summarized in the table below. Each modeled value represents the maximum concentration for each averaging time. In accordance with The Toxics Guideline, the 1-hour model results were multiplied by 1.32 to generate an equivalent 15-minute averaging AAC. Unlike the previous submission, which featured an interpolation method, each pollutant was individually modeled by AERMOD to eliminate the assumption of a linear relationship between facility emissions and resulting concentrations.

To simplify the presentation of the data, the following table show the averaging time appropriate AACs for all of the modeled TAPs at the fenceline.

Source ID	15-Min. AAC [μg/m³]	Fenceline [μg/m³]	24-Hour AAC [μg/m³]	Fenceline [μg/m³]	Annual AAC [μg/m³]	Fenceline [μg/m³]
Methanol	32,800	90.5	619	23.7	NA	2.3
Formaldehyde	245	27.8	NA	7.3	1.1	0.70
Phenol	6,000	4.9	45.2	1.3	NA	0.12
Acetaldehyde	4,500	19.8	NA	5.2	4.55	0.50
Acrolein	23	2.8	NA	0.74	0.15	0.07
Propionaldehyde	NA	1.4	NA	0.37	8	0.04
MIK	30,700	1.1	NA	0.28	3,000	0.03
Benzene	1,600	0.18	NA	0.05	0.13	0.005
o-Xylene	65,500	0.11	NA	0.03	100	0.003
Toluene	113,000	0.05	NA	0.02	5,000	0.002

FIGURES
2-1 and 2-2

FACILITY LAYOUT

&

AREA MAP

Figure 2-1. Facility Layout

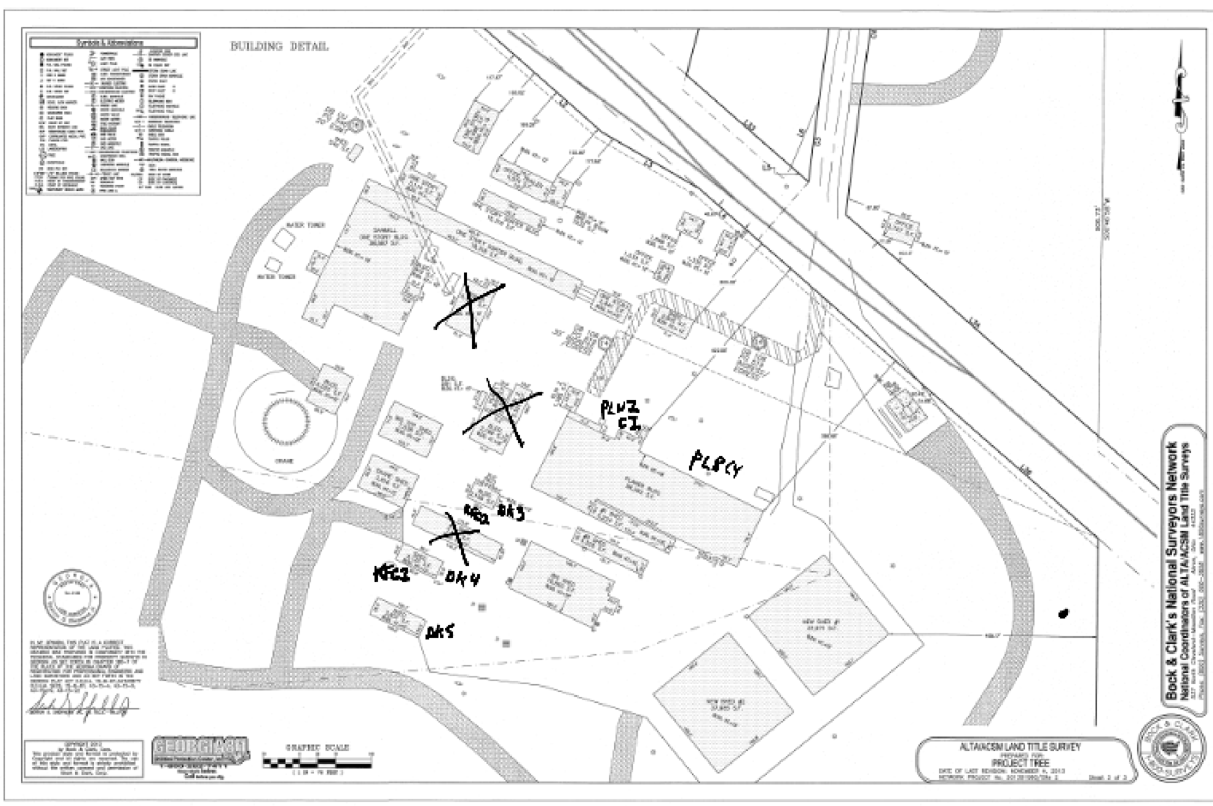


Figure 2-2. Area Map

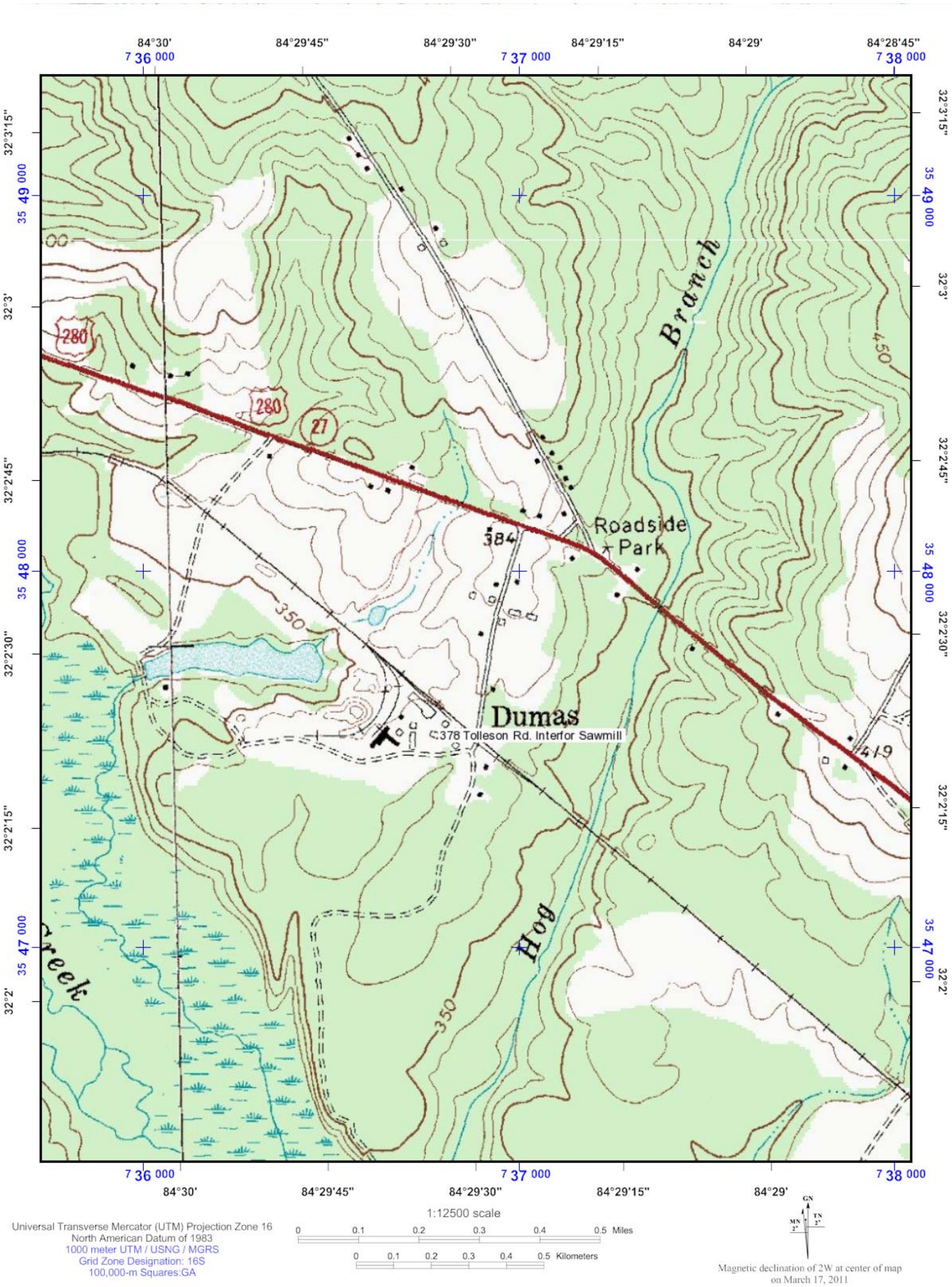
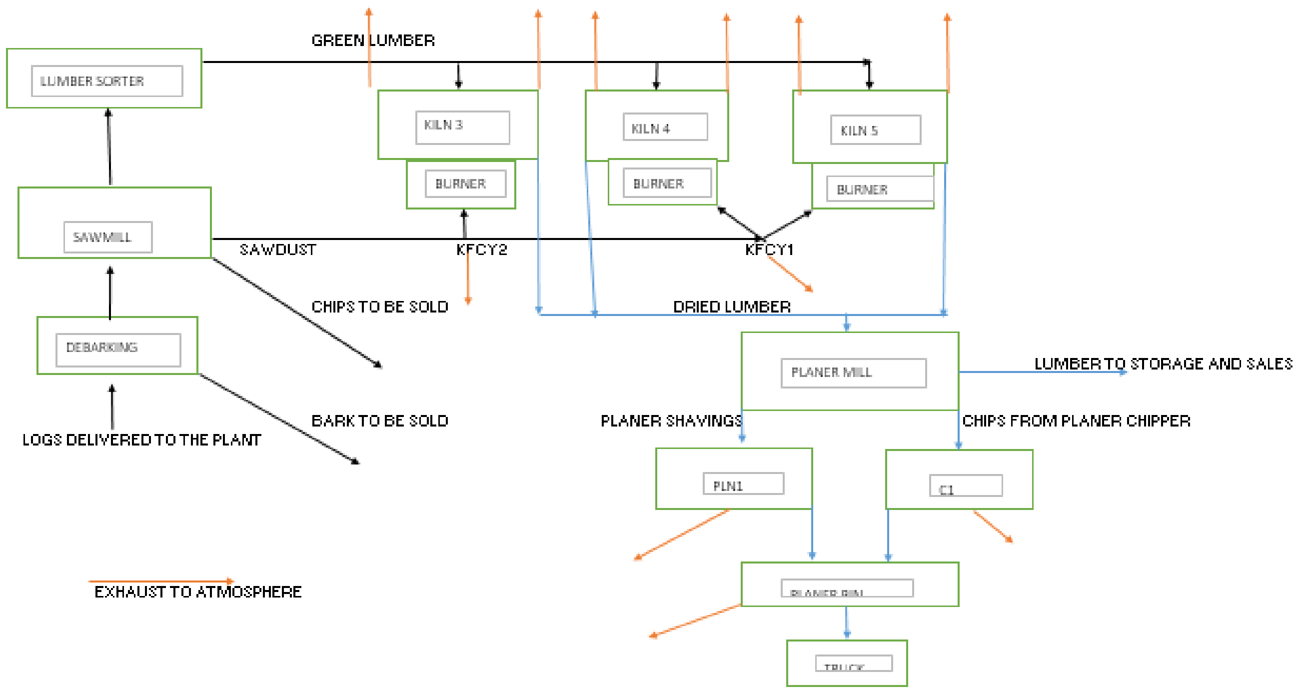


Figure 2-3. Process Flow Diagram



Appendix A
Historical Production Information

Table A-1. Boiler 1 Fuel Usage

Date	Boiler 1 Fuel (Tons) Monthly	Boiler 1 Fuel (Tons) 12-Month	Boiler 1 Fuel (MMBtu)[1] Monthly	Boiler 1 Fuel (MMBtu)[1] 12-Month
Jan-06	3,171		28,543	
Feb-06	2,690		24,209	
Mar-06	3,453		31,076	
Apr-06	3,349		30,143	
May-06	3,083		27,750	
Jun-06	2,116		19,042	
Jul-06	3,814		34,327	
Aug-06	2,850		25,653	
Sep-06	3,157		28,417	
Oct-06	3,163		28,464	
Nov-06	2,857		25,716	
Dec-06	2,425	36,130	21,828	325,170
Jan-07	3,027	35,985	27,243	323,869
Feb-07	2,702	35,998	24,318	323,979
Mar-07	3,212	35,757	28,908	321,811
Apr-07	2,921	35,329	26,289	317,957
May-07	2,488	34,733	22,392	312,599
Jun-07	3,770	36,387	33,930	327,486
Jul-07	3,080	35,653	27,720	320,879
Aug-07	3,088	35,891	27,792	323,018
Sep-07	3,041	35,774	27,369	321,970
Oct-07	3,144	35,756	28,296	321,802
Nov-07	2,741	35,639	24,669	320,754
Dec-07	1,925	35,139	17,325	316,251
Jan-08	2,081	34,193	18,729	307,737
Feb-08	2,586	34,077	23,274	306,693
Mar-08	3,162	34,027	28,458	306,243
Apr-08	2,895	34,001	26,055	306,009
May-08	3,072	34,585	27,648	311,265
Jun-08	2,784	33,599	25,056	302,391
Jul-08	3,111	33,630	27,999	302,670
Aug-08	2,917	33,459	26,253	301,131
Sep-08	2,654	33,072	23,886	297,648
Oct-08	2,878	32,806	25,902	295,254
Nov-08	2,700	32,765	24,300	294,885
Dec-08	2,263	33,103	20,367	297,927
Jan-09	1,851	32,873	16,659	295,857
Feb-09	3,043	33,330	27,387	299,970
Mar-09	3,076	33,244	27,684	299,196
Apr-09	2,779	33,128	25,011	298,152
May-09	2,068	32,124	18,612	289,116
Jun-09	2,963	32,303	26,667	290,727
Jul-09	2,905	32,097	26,145	288,873
Aug-09	3,306	32,486	29,754	292,374
Sep-09	2,876	32,708	25,884	294,372
Oct-09	3,345	33,175	30,105	298,575
Nov-09	2,412	32,887	21,708	295,983
Dec-09	2,584	33,208	23,256	298,872
Jan-10	3,083	34,440	27,747	309,960
Feb-10	2,713	34,110	24,417	306,990
Mar-10	3,160	34,194	28,440	307,746
Apr-10	2,896	34,311	26,064	308,799
May-10	2,465	34,708	22,185	312,372

Jun-10	2,400	34,145	21,600	307,305
Jul-10	2,236	33,476	20,127	301,287
Aug-10	2,399	32,569	21,588	293,121
Sep-10	2,418	32,111	21,765	289,002
Oct-10	2,393	31,159	21,538	280,434
Nov-10	2,459	31,206	22,129	280,856
Dec-10	2,621	31,244	23,593	281,193
Jan-11	3,104	31,265	27,936	281,382
Feb-11	2,567	31,119	23,103	280,068
Mar-11	3,016	30,975	27,144	278,772
Apr-11	2,826	30,905	25,434	278,142
May-11	2,834	31,274	25,506	281,463
Jun-11	2,857	31,731	25,713	285,576
Jul-11	2,604	32,098	23,436	288,885
Aug-11	2,887	32,587	25,983	293,280
Sep-11	2,806	32,974	25,254	296,769
Oct-11	3,189	33,770	28,701	303,932
Nov-11	2,942	34,253	26,478	308,281
Dec-11	2,831	34,463	25,479	310,167
Jan-12	3,352	34,711	30,168	312,399
Feb-12	3,381	35,525	30,429	319,725
Mar-12	3,271	35,780	29,439	322,020
Apr-12	3,179	36,133	28,611	325,197
May-12	3,038	36,337	27,342	327,033
Jun-12	2,934	36,414	26,406	327,726
Jul-12	2,797	36,607	25,173	329,463
Aug-12	3,137	36,857	28,233	331,713
Sep-12	2,042	36,093	18,378	324,837
Oct-12	1,864	34,768	16,776	312,912
Nov-12	2,037	33,863	18,333	304,767
Dec-12	2,663	33,695	23,967	303,255
Jan-13	2,718	33,061	24,462	297,549
Feb-13	2,242	31,922	20,178	287,298
Mar-13	2,981	31,632	26,829	284,688
Apr-13	2,982	31,435	26,838	282,915
May-13	2,838	31,235	25,542	281,115
Jun-13	2,917	31,218	26,253	280,962
Jul-13	2,736	31,157	24,624	280,413
Aug-13	2,562	30,582	23,058	275,238
Sep-13	2,722	31,262	24,498	281,358
Oct-13	2,675	32,073	24,075	288,657
Nov-13	2,913	32,949	26,217	296,541
Dec-13	2,495	32,781	22,455	295,029
Jan-14	2,651	32,714	23,857	294,424
Feb-14	2,774	33,246	24,966	299,212
Mar-14	3,085	33,350	27,765	300,149
Apr-14	3,053	33,421	27,476	300,787
May-14	2,930	33,513	26,373	301,618
Jun-14	2,806	33,403	25,258	300,623
Jul-14	3,008	33,675	27,072	303,071
Aug-14	2,519	33,632	22,671	302,684
Sep-14	2,727	33,637	24,543	302,729
Oct-14	2,550	33,512	22,950	301,604
Nov-14	2,919	33,518	26,271	301,658
Dec-14	3,032	34,055	27,288	306,491
Jan-15		31,404	0	282,634
Feb-15		28,630	0	257,668
Mar-15		25,545	0	229,903
Apr-15		22,492	0	202,427
May-15		19,561	0	176,053
Jun-15		16,755	0	150,795
Jul-15		13,747	0	123,723
Aug-15		11,228	0	101,052
Sep-15		8,501	0	76,509
Oct-15		5,951	0	53,559
Nov-15		3,032	0	27,288
Dec-15		0	0	0
Maximum	**3,814**	**36,857**	**34,327**	**331,713**

1. Average heat capacity of fuel 4,500 Btu/lb

Table A-2. Boiler 2 Fuel Usage

Date	Boiler 2 Fuel (Tons) Monthly	Boiler 2 Fuel (Tons) 12-Month	Boiler 2 Fuel (MMBtu)[1] Monthly	Boiler 2 Fuel (MMBtu)[1] 12-Month
Jan-06	2,689		24,199	
Feb-06	2,704		24,332	
Mar-06	2,930		26,366	
Apr-06	2,729		24,563	
May-06	2,249		20,238	
Jun-06	2,186		19,670	
Jul-06	2,235		20,114	
Aug-06	2,836		25,525	
Sep-06	2,861		25,753	
Oct-06	2,529		22,759	
Nov-06	2,745		24,706	
Dec-06	1,982	30,674	17,837	276,063
Jan-07	2,609	30,594	23,481	275,344
Feb-07	2,616	30,506	23,544	274,557
Mar-07	2,976	30,553	26,784	274,975
Apr-07	2,759	30,582	24,831	275,242
May-07	2,687	31,021	24,183	279,187
Jun-07	2,613	31,448	23,517	283,034
Jul-07	2,464	31,677	22,176	285,097
Aug-07	2,944	31,785	26,496	286,067
Sep-07	2,873	31,797	25,857	286,171
Oct-07	3,007	32,275	27,063	290,475
Nov-07	2,932	32,462	26,388	292,157
Dec-07	2,318	32,798	20,862	295,182
Jan-08	1,891	32,080	17,019	288,720
Feb-08	2,348	31,812	21,132	286,308
Mar-08	2,789	31,625	25,101	284,625
Apr-08	2,859	31,725	25,731	285,525
May-08	2,694	31,732	24,246	285,588
Jun-08	2,490	31,609	22,410	284,481
Jul-08	2,568	31,713	23,112	285,417
Aug-08	2,962	31,731	26,658	285,579
Sep-08	2,596	31,454	23,364	283,086
Oct-08	2,539	30,986	22,851	278,874
Nov-08	2,405	30,459	21,645	274,131
Dec-08	2,089	30,230	18,801	272,070
Jan-09	1,093	29,432	9,837	264,888
Feb-09	2,530	29,614	22,770	266,526
Mar-09	2,428	29,253	21,852	263,277
Apr-09	2,461	28,855	22,149	259,695
May-09	2,815	28,976	25,335	260,784
Jun-09	2,413	28,899	21,717	260,091
Jul-09	2,527	28,858	22,743	259,722
Aug-09	2,499	28,395	22,491	255,555
Sep-09	2,608	28,407	23,472	255,663
Oct-09	2,391	28,259	21,519	254,331
Nov-09	1,445	27,299	13,005	245,691
Dec-09	2,227	27,437	20,043	246,933
Jan-10	2,539	28,883	22,851	259,947
Feb-10	2,220	28,573	19,980	257,157
Mar-10	2,624	28,769	23,616	258,921
Apr-10	2,304	28,612	20,736	257,508
May-10	2,528	28,325	22,752	254,925

Jun-10	2,379	28,291	21,411	254,619
Jul-10	2,206	27,970	19,853	251,729
Aug-10	2,303	27,774	20,728	249,966
Sep-10	2,436	27,602	21,923	248,417
Oct-10	2,421	27,632	21,786	248,684
Nov-10	2,117	28,303	19,049	254,728
Dec-10	2,237	28,313	20,137	254,821
Jan-11	2,637	28,411	23,733	255,703
Feb-11	2,530	28,721	22,770	258,493
Mar-11	2,470	28,567	22,230	257,107
Apr-11	2,481	28,744	22,329	258,700
May-11	2,574	28,790	23,166	259,114
Jun-11	2,200	28,611	19,800	257,503
Jul-11	2,506	28,912	22,554	260,204
Aug-11	2,348	28,956	21,132	260,608
Sep-11	2,628	29,149	23,652	262,338
Oct-11	2,687	29,415	24,183	264,735
Nov-11	2,329	29,627	20,961	266,647
Dec-11	2,592	29,982	23,328	269,838
Jan-12	2,606	29,951	23,454	269,559
Feb-12	2,239	29,660	20,151	266,940
Mar-12	2,338	29,528	21,042	265,752
Apr-12	1,277	28,324	11,493	254,916
May-12	2,899	28,649	26,091	257,841
Jun-12	2,755	29,204	24,795	262,836
Jul-12	1,657	28,355	14,913	255,195
Aug-12	2,252	28,259	20,268	254,331
Sep-12	3,319	28,950	29,871	260,550
Oct-12	1,630	27,893	14,670	251,037
Nov-12	1,913	27,477	17,217	247,293
Dec-12	2,663	27,548	23,967	247,932
Jan-13	2,670	27,612	24,030	248,508
Feb-13	2,647	28,020	23,823	252,180
Mar-13	2,700	28,382	24,300	255,438
Apr-13	2,602	29,707	23,418	267,363
May-13	2,747	29,555	24,723	265,995
Jun-13	2,192	28,992	19,728	260,928
Jul-13	2,912	30,247	26,208	272,223
Aug-13	2,554	30,549	22,986	274,941
Sep-13	2,735	29,965	24,615	269,685
Oct-13	2,855	31,190	25,695	280,710
Nov-13	3,062	32,339	27,558	291,051
Dec-13	2,715	32,391	24,435	291,519
Jan-14	2,844	32,565	25,594	293,083
Feb-14	2,611	32,529	23,496	292,757
Mar-14	3,263	33,091	29,364	297,821
Apr-14	2,752	33,242	24,772	299,174
May-14	3,111	33,605	27,995	302,447
Jun-14	2,797	34,211	25,176	307,895
Jul-14	3,046	34,345	27,414	309,101
Aug-14	2,840	34,631	25,560	311,675
Sep-14	2,911	34,807	26,199	313,259
Oct-14	3,104	35,056	27,936	315,500
Nov-14	2,606	34,600	23,454	311,396
Dec-14	3,357	35,242	30,213	317,174
Jan-15		32,398	0	291,580
Feb-15		29,787	0	268,083
Mar-15		26,524	0	238,719
Apr-15		23,772	0	213,947
May-15		20,661	0	185,952
Jun-15		17,864	0	160,776
Jul-15		14,818	0	133,362
Aug-15		11,978	0	107,802
Sep-15		9,067	0	81,603
Oct-15		5,963	0	53,667
Nov-15		3,357	0	30,213
Dec-15		0	0	0
Maximum	**3,357**	**35,242**	**30,213**	**317,174**

1. Average heat capacity of fuel 4,500 Btu/lb

Table A-3. Kiln 1 Production

Date	Kiln 1 (Board Feet) Monthly	12-Month
Jan-06	4,442,600	
Feb-06	3,789,695	
Mar-06	3,898,216	
Apr-06	4,863,330	
May-06	3,837,469	
Jun-06	4,243,081	
Jul-06	2,072,903	
Aug-06	2,517,911	
Sep-06	3,402,928	
Oct-06	3,437,076	
Nov-06	2,970,873	
Dec-06	2,843,417	42,319,498
Jan-07	3,279,208	41,156,107
Feb-07	2,651,213	40,017,625
Mar-07	3,150,451	39,269,860
Apr-07	3,868,715	38,275,245
May-07	3,018,562	37,456,338
Jun-07	3,090,266	36,303,523
Jul-07	3,884,596	38,115,216
Aug-07	3,065,389	38,662,694
Sep-07	3,013,653	38,273,419
Oct-07	3,759,309	38,595,652
Nov-07	2,818,837	38,443,616
Dec-07	2,176,986	37,777,185
Jan-08	2,459,618	36,957,595
Feb-08	2,049,925	36,356,307
Mar-08	3,787,420	36,993,276
Apr-08	3,623,800	36,748,361
May-08	2,943,086	36,672,885
Jun-08	2,613,408	36,196,027
Jul-08	3,605,707	35,917,138
Aug-08	3,021,570	35,873,319
Sep-08	2,819,951	35,679,617
Oct-08	3,066,653	34,986,961
Nov-08	2,559,186	34,727,310
Dec-08	2,193,206	34,743,530
Jan-09	2,629,684	34,913,596
Feb-09	3,015,387	35,879,058
Mar-09	2,818,859	34,910,497
Apr-09	3,358,155	34,644,852
May-09	2,234,954	33,936,720
Jun-09	2,865,835	34,189,147
Jul-09	3,708,306	34,291,746
Aug-09	2,739,058	34,009,234
Sep-09	2,865,062	34,054,345
Oct-09	2,554,427	33,542,119
Nov-09	2,008,544	32,991,477
Dec-09	2,018,185	32,816,456
Jan-10	2,849,457	33,036,229
Feb-10	3,164,924	33,185,766
Mar-10	2,549,702	32,916,609
Apr-10	3,170,904	32,729,358
May-10	2,400,146	32,894,550
Jun-10	2,340,220	32,368,935
Jul-10	2,653,844	31,314,473
Aug-10	2,333,180	30,908,595
Sep-10	2,652,793	30,696,326
Oct-10	2,334,758	30,476,657

Nov-10	1,965,260	30,433,373
Dec-10	2,404,579	30,819,767
Jan-11	2,532,546	30,502,856
Feb-11	2,402,131	29,740,063
Mar-11	3,149,197	30,339,558
Apr-11	2,836,432	30,005,086
May-11	2,773,132	30,378,072
Jun-11	3,359,934	31,397,786
Jul-11	1,976,732	30,720,674
Aug-11	2,832,360	31,219,854
Sep-11	3,475,674	32,042,735
Oct-11	1,756,186	31,464,163
Nov-11	2,021,405	31,520,308
Dec-11	1,167,168	30,282,897
Jan-12	2,408,991	30,159,342
Feb-12	2,491,632	30,248,843
Mar-12	2,867,001	29,966,647
Apr-12	2,796,718	29,926,933
May-12	3,172,933	30,326,734
Jun-12	2,903,419	29,870,219
Jul-12	2,271,777	30,165,264
Aug-12	2,484,104	29,817,008
Sep-12	1,192,242	27,533,576
Oct-12	2,996,007	28,773,397
Nov-12	2,616,631	29,368,623
Dec-12	2,663,740	30,865,195
Jan-13	2,843,844	31,300,048
Feb-13	2,536,265	31,344,681
Mar-13	2,486,552	30,964,232
Apr-13	2,835,049	31,002,563
May-13	3,000,517	30,830,147
Jun-13	2,965,671	30,892,399
Jul-13	2,496,330	31,116,952
Aug-13	2,537,098	31,169,946
Sep-13	2,786,009	32,763,713
Oct-13	2,299,673	32,067,379
Nov-13	2,819,270	32,270,018
Dec-13	2,463,655	32,069,933
Jan-14[1]	3,027,673	32,253,762
Feb-14[1]	3,027,673	32,745,171
Mar-14	1,769,502	32,028,121
Apr-14	3,205,450	32,398,522
May-14	3,400,280	32,798,285
Jun-14	3,325,316	33,157,930
Jul-14	3,354,838	34,016,438
Aug-14	2,985,194	34,464,534
Sep-14	2,941,612	34,620,137
Oct-14	3,139,164	35,459,628
Nov-14	2,987,972	35,628,330
Dec-14	3,167,406	36,332,081
Jan-15	2,927,506	36,231,913
Feb-15	2,887,332	36,091,572
Mar-15	3,102,778	37,424,848
Apr-15	2,840,838	37,060,236
May-15	3,041,012	36,700,968
Jun-15	3,015,688	36,391,340
Jul-15	3,280,159	36,316,661
Aug-15	2,931,056	36,262,523
Sep-15	2,807,430	36,128,341
Oct-15	2,853,647	35,842,824
Nov-15	2,711,223	35,566,075
Dec-15	2,581,193	34,979,862
Maximum	4,863,330	42,319,498

1. Facility ownership change resulted in January and February 2014 periods monthly production data not available. Therefore, a monthly average based on March-December 2014 periods operation was used for January and February 2014 periods.

Table A-4. Kiln 2 Production

Date	Kiln 2 (Board Feet) Monthly	Kiln 2 (Board Feet) 12-Month
Jan-06	3,803,964	
Feb-06	3,244,916	
Mar-06	3,337,837	
Apr-06	4,164,213	
May-06	3,285,822	
Jun-06	3,633,126	
Jul-06	2,606,294	
Aug-06	2,100,749	
Sep-06	3,222,769	
Oct-06	3,191,922	
Nov-06	3,019,057	
Dec-06	2,402,970	38,013,638
Jan-07	2,990,499	37,200,173
Feb-07	2,572,654	36,527,911
Mar-07	3,138,404	36,328,479
Apr-07	3,668,775	35,833,041
May-07	2,827,745	35,374,964
Jun-07	2,746,661	34,488,499
Jul-07	3,391,373	35,273,578
Aug-07	3,322,649	36,495,478
Sep-07	3,159,661	36,432,370
Oct-07	3,315,813	36,556,261
Nov-07	3,018,666	36,555,870
Dec-07	2,103,118	36,256,018
Jan-08	2,266,477	35,531,996
Feb-08	1,782,035	34,741,377
Mar-08	3,264,903	34,867,876
Apr-08	3,518,529	34,717,630
May-08	2,872,669	34,762,554
Jun-08	2,502,240	34,518,133
Jul-08	3,359,624	34,486,384
Aug-08	2,386,576	33,550,311
Sep-08	2,748,105	33,138,755
Oct-08	2,886,964	32,709,906
Nov-08	2,490,005	32,181,245
Dec-08	1,793,787	31,871,914
Jan-09	3,188,975	32,794,412
Feb-09	2,900,656	33,913,033
Mar-09	2,616,508	33,264,638
Apr-09	3,211,576	32,957,685
May-09	1,977,081	32,062,097
Jun-09	2,402,455	31,962,312
Jul-09	2,832,321	31,435,009
Aug-09	2,391,556	31,439,989
Sep-09	2,306,263	30,998,147
Oct-09	2,806,366	30,917,549
Nov-09	1,914,564	30,342,108
Dec-09	1,638,862	30,187,183
Jan-10	2,790,644	29,788,852
Feb-10	2,914,142	29,802,338
Mar-10	2,423,076	29,608,906
Apr-10	3,019,168	29,416,498
May-10	2,184,138	29,623,555
Jun-10	2,196,684	29,417,784
Jul-10	2,419,546	29,005,009
Aug-10	2,233,840	28,847,293
Sep-10	2,368,585	28,909,615
Oct-10	2,338,619	28,441,868

Nov-10	2,136,878	28,664,182
Dec-10	2,294,953	29,320,273
Jan-11	2,270,494	28,800,123
Feb-11	2,470,217	28,356,198
Mar-11	2,793,308	28,726,430
Apr-11	2,485,826	28,193,088
May-11	2,611,436	28,620,386
Jun-11	3,412,825	29,836,527
Jul-11	2,233,937	29,650,918
Aug-11	2,775,345	30,192,423
Sep-11	3,332,247	31,156,085
Oct-11	1,772,124	30,589,590
Nov-11	1,900,778	30,353,490
Dec-11	951,186	29,009,723
Jan-12	2,541,390	29,280,619
Feb-12	2,274,109	29,084,511
Mar-12	2,803,534	29,094,737
Apr-12	1,900,026	28,508,937
May-12	3,107,505	29,005,006
Jun-12	2,654,036	28,246,217
Jul-12	2,212,424	28,224,704
Aug-12	2,117,930	27,567,289
Sep-12	1,094,394	25,329,436
Oct-12	2,544,952	26,102,264
Nov-12	2,300,157	26,501,643
Dec-12	2,413,535	27,963,992
Jan-13	2,465,186	27,887,788
Feb-13	2,143,910	27,757,589
Mar-13	2,310,175	27,264,230
Apr-13	2,638,805	28,003,009
May-13	2,793,396	27,688,900
Jun-13	2,526,590	27,561,454
Jul-13	2,357,710	27,706,740
Aug-13	2,341,418	27,930,228
Sep-13	2,477,547	29,313,381
Oct-13	2,925,266	29,693,695
Nov-13	2,667,507	30,061,045
Dec-13	2,296,211	29,943,721
Jan-14[1]	2,764,031	30,242,566
Feb-14[1]	2,764,031	30,862,687
Mar-14	1,429,076	29,981,588
Apr-14	2,983,702	30,326,485
May-14	3,088,042	30,621,131
Jun-14	3,196,038	31,290,579
Jul-14	3,316,716	32,249,585
Aug-14	2,483,422	32,391,589
Sep-14	2,699,244	32,613,286
Oct-14	3,067,506	32,755,526
Nov-14	2,565,644	32,653,663
Dec-14	2,810,918	33,168,370
Jan-15	2,668,988	33,073,327
Feb-15	2,375,618	32,684,914
Mar-15	2,808,064	34,063,902
Apr-15	2,639,098	33,719,298
May-15	2,386,791	33,018,047
Jun-15	2,744,297	32,566,306
Jul-15	3,120,877	32,370,467
Aug-15	2,627,091	32,514,136
Sep-15	2,675,552	32,490,444
Oct-15	2,746,682	32,169,620
Nov-15	2,516,321	32,120,297
Dec-15	2,282,111	31,591,490
Maximum	4,164,213	38,013,638

1. Facility ownership change resulted in January and February 2014 periods monthly production data not available. Therefore, a monthly average based on March-December 2014 periods operation was used for January and February 2014 periods.

Table A-5. Kiln 3 Production

Date	Kiln 3 (Board Feet) Monthly	12-Month
Jan-06	4,088,465	
Feb-06	3,487,606	
Mar-06	3,587,476	
Apr-06	4,475,658	
May-06	3,531,571	
Jun-06	3,904,851	
Jul-06	2,197,150	
Aug-06	2,443,821	
Sep-06	3,283,419	
Oct-06	2,978,806	
Nov-06	2,704,780	
Dec-06	2,553,739	39,237,341
Jan-07	2,926,085	38,074,961
Feb-07	2,557,234	37,144,589
Mar-07	3,135,144	36,692,257
Apr-07	3,247,187	35,463,787
May-07	2,944,446	34,876,662
Jun-07	2,889,285	33,861,096
Jul-07	3,285,381	34,949,327
Aug-07	2,843,352	35,348,858
Sep-07	2,912,697	34,978,136
Oct-07	3,295,480	35,294,810
Nov-07	2,403,469	34,993,499
Dec-07	1,652,222	34,091,982
Jan-08	2,185,044	33,350,941
Feb-08	1,782,917	32,576,624
Mar-08	3,276,397	32,717,877
Apr-08	3,492,220	32,962,910
May-08	2,667,707	32,686,171
Jun-08	2,461,796	32,258,682
Jul-08	3,375,847	32,349,148
Aug-08	2,768,722	32,274,518
Sep-08	2,699,769	32,061,590
Oct-08	3,515,205	32,281,315
Nov-08	2,105,860	31,983,706
Dec-08	1,991,699	32,323,183
Jan-09	2,779,223	32,917,362
Feb-09	2,731,738	33,866,183
Mar-09	2,589,661	33,179,447
Apr-09	3,316,655	33,003,882
May-09	1,880,233	32,216,408
Jun-09	2,435,690	32,190,302
Jul-09	4,190,204	33,004,659
Aug-09	2,507,863	32,743,800
Sep-09	2,549,975	32,594,006
Oct-09	2,587,007	31,665,808
Nov-09	1,772,027	31,331,975
Dec-09	1,789,034	31,129,310
Jan-10	2,732,726	31,082,813
Feb-10	2,756,679	31,107,754
Mar-10	2,503,804	31,021,897
Apr-10	2,999,632	30,704,874
May-10	2,096,360	30,921,001
Jun-10	2,235,292	30,720,603
Jul-10	2,465,488	28,995,887
Aug-10	2,204,426	28,692,450
Sep-10	2,427,197	28,569,672
Oct-10	2,583,100	28,565,765

Nov-10	2,035,945	28,829,683
Dec-10	2,217,625	29,258,274
Jan-11	2,365,812	28,891,360
Feb-11	2,324,723	28,459,404
Mar-11	2,661,336	28,616,936
Apr-11	2,683,535	28,300,839
May-11	2,863,501	29,067,980
Jun-11	2,980,348	29,813,036
Jul-11	2,094,052	29,441,600
Aug-11	2,628,763	29,865,937
Sep-11	3,392,375	30,831,115
Oct-11	1,805,821	30,053,836
Nov-11	1,989,538	30,007,429
Dec-11	990,685	28,780,489
Jan-12	2,549,532	28,964,209
Feb-12	2,487,425	29,126,911
Mar-12	3,046,437	29,512,012
Apr-12	2,826,169	29,654,646
May-12	3,019,574	29,810,719
Jun-12	2,932,099	29,762,470
Jul-12	2,455,028	30,123,446
Aug-12	2,600,657	30,095,340
Sep-12	1,155,513	27,858,478
Oct-12	2,812,819	28,865,476
Nov-12	2,602,877	29,478,815
Dec-12	2,273,186	30,761,316
Jan-13	2,664,715	30,876,499
Feb-13	2,341,818	30,730,892
Mar-13	2,273,223	29,957,678
Apr-13	2,556,572	29,688,081
May-13	2,892,935	29,561,442
Jun-13	2,643,472	29,272,815
Jul-13	2,565,816	29,383,603
Aug-13	2,339,285	29,122,231
Sep-13	2,627,582	30,594,300
Oct-13	2,627,114	30,408,595
Nov-13	2,665,111	30,470,829
Dec-13	2,299,480	30,497,123
Jan-14[1]	2,895,908	30,728,316
Feb-14[1]	2,895,908	31,282,407
Mar-14	1,595,944	30,605,128
Apr-14	3,025,156	31,073,712
May-14	3,300,610	31,481,387
Jun-14	3,118,576	31,956,491
Jul-14	3,265,334	32,656,009
Aug-14	2,862,820	33,179,544
Sep-14	2,635,382	33,187,344
Oct-14	3,136,594	33,696,824
Nov-14	2,904,534	33,936,247
Dec-14	3,114,134	34,750,901
Jan-15	2,763,684	34,618,676
Feb-15	2,767,380	34,490,148
Mar-15	3,086,986	35,981,190
Apr-15	2,738,470	35,694,504
May-15	3,022,063	35,415,957
Jun-15	3,048,671	35,346,052
Jul-15	3,188,045	35,268,763
Aug-15	2,580,789	34,986,732
Sep-15	2,697,650	35,049,000
Oct-15	2,810,813	34,723,219
Nov-15	2,555,279	34,373,964
Dec-15	2,687,242	33,947,072
Maximum	4,475,658	39,237,341

1. Facility ownership change resulted in January and February 2014 periods monthly production data not available. Therefore, a monthly average based on March-December 2014 periods operation was used for January and February 2014 periods.

Table A-6. Kiln 4 Production

	Kiln 4 (Board Feet)	
Date	Monthly	12-Month
Jan-06	3,965,115	
Feb-06	3,382,383	
Mar-06	3,479,241	
Apr-06	4,340,626	
May-06	3,425,022	
Jun-06	3,787,040	
Jul-06	5,176,837	
Aug-06	3,542,677	
Sep-06	4,609,025	
Oct-06	3,830,851	
Nov-06	4,482,608	
Dec-06	3,872,448	47,893,873
Jan-07	3,760,126	47,688,884
Feb-07	2,599,780	46,906,281
Mar-07	3,214,236	46,641,276
Apr-07	3,664,656	45,965,306
May-07	4,593,938	47,134,222
Jun-07	3,946,000	47,293,182
Jul-07	5,520,997	47,637,342
Aug-07	4,557,866	48,652,531
Sep-07	4,566,057	48,609,563
Oct-07	3,917,245	48,695,957
Nov-07	3,638,448	47,851,797
Dec-07	2,786,433	46,765,782
Jan-08	3,533,086	46,538,742
Feb-08	2,542,589	46,481,551
Mar-08	4,406,566	47,673,881
Apr-08	4,950,310	48,959,535
May-08	3,402,064	47,767,661
Jun-08	3,128,385	46,950,046
Jul-08	4,109,273	45,538,322
Aug-08	4,098,348	45,078,804
Sep-08	3,710,122	44,222,869
Oct-08	4,257,990	44,563,614
Nov-08	3,316,203	44,241,369
Dec-08	2,145,764	43,600,700
Jan-09	1,280,022	41,347,636
Feb-09	0	38,805,047
Mar-09	0	34,398,481
Apr-09	0	29,448,171
May-09	429,042	26,475,149
Jun-09	0	23,346,764
Jul-09	1,583,106	20,820,597
Aug-09	0	16,722,249
Sep-09	0	13,012,127
Oct-09	0	8,754,137
Nov-09	865,532	6,303,466
Dec-09	866,202	5,023,904
Jan-10	1,934,954	5,678,836
Feb-10	576,660	6,255,496
Mar-10	1,741,180	7,996,676
Apr-10	2,184,448	10,181,124
May-10	1,747,180	11,499,262
Jun-10	2,592,716	14,091,978
Jul-10	2,313,388	14,822,260
Aug-10	1,786,896	16,609,156
Sep-10	1,022,700	17,631,856
Oct-10	1,464,540	19,096,396

Nov-10	2,478,504	20,709,368
Dec-10	1,730,680	21,573,846
Jan-11	1,310,764	20,949,656
Feb-11	1,122,408	21,495,404
Mar-11	1,860,936	21,615,160
Apr-11	282,632	19,713,344
May-11	3,735,438	21,701,602
Jun-11	4,673,200	23,782,086
Jul-11	2,751,392	24,220,090
Aug-11	3,556,196	25,989,390
Sep-11	4,582,816	29,549,506
Oct-11	2,687,244	30,772,210
Nov-11	2,923,088	31,216,794
Dec-11	1,519,924	31,006,038
Jan-12	3,779,916	33,475,190
Feb-12	3,641,736	35,994,518
Mar-12	3,773,644	37,907,226
Apr-12	4,334,736	41,959,330
May-12	4,311,832	42,535,724
Jun-12	4,345,852	42,208,376
Jul-12	3,566,934	43,023,918
Aug-12	3,395,434	42,863,156
Sep-12	1,516,424	39,796,764
Oct-12	3,888,444	40,997,964
Nov-12	3,873,506	41,948,382
Dec-12	3,799,020	44,227,478
Jan-13	3,589,992	44,037,554
Feb-13	3,192,210	43,588,028
Mar-13	3,243,100	43,057,484
Apr-13	3,585,400	42,308,148
May-13	3,905,580	41,901,896
Jun-13	3,368,512	40,924,556
Jul-13	3,503,164	40,860,786
Aug-13	3,510,962	40,976,314
Sep-13	3,640,504	43,100,394
Oct-13	4,000,948	43,212,898
Nov-13	3,221,666	42,561,058
Dec-13	3,027,567	41,789,605
Jan-14[1]	3,439,079	41,638,692
Feb-14[1]	3,439,079	41,885,561
Mar-14	2,176,720	40,819,181
Apr-14	3,869,124	41,102,905
May-14	3,771,782	40,969,107
Jun-14	3,614,632	41,215,227
Jul-14	2,895,536	40,607,599
Aug-14	3,929,156	41,025,793
Sep-14	3,741,178	41,126,467
Oct-14	3,863,860	40,989,379
Nov-14	3,645,068	41,412,781
Dec-14	2,883,734	41,268,948
Jan-15	3,486,826	41,316,695
Feb-15	3,769,206	41,646,822
Mar-15	4,199,972	43,670,074
Apr-15	4,222,176	44,023,126
May-15	4,407,852	44,659,196
Jun-15	3,777,815	44,822,379
Jul-15	4,837,773	46,764,616
Aug-15	4,248,897	47,084,357
Sep-15	4,251,903	47,595,082
Oct-15	4,392,425	48,123,647
Nov-15	4,389,448	48,868,027
Dec-15	4,435,286	50,419,579
Maximum	5,520,997	50,419,579

1. Facility ownership change resulted in January and February 2014 periods monthly production data not available. Therefore, a monthly average based on March-December 2014 periods operation was used for January and February 2014 periods.

Table A-7. Kiln 5 Production

Date	Kiln 5 (Board Feet) Monthly	12-Month
Jan-06	3,595,064	
Feb-06	3,066,717	
Mar-06	3,154,535	
Apr-06	3,935,530	
May-06	3,105,376	
Jun-06	3,433,608	
Jul-06	5,263,281	
Aug-06	3,642,965	
Sep-06	4,588,024	
Oct-06	4,743,676	
Nov-06	4,097,642	
Dec-06	3,365,764	45,992,182
Jan-07	3,516,360	45,913,478
Feb-07	2,666,410	45,513,171
Mar-07	3,684,666	46,043,302
Apr-07	4,938,190	47,045,963
May-07	3,231,778	47,172,364
Jun-07	3,932,117	47,670,873
Jul-07	3,953,071	46,360,663
Aug-07	2,495,167	45,212,865
Sep-07	2,689,135	43,313,976
Oct-07	3,414,738	41,985,038
Nov-07	3,027,488	40,914,884
Dec-07	2,124,989	39,674,109
Jan-08	2,660,334	38,818,083
Feb-08	2,115,863	38,267,536
Mar-08	4,113,956	38,696,826
Apr-08	4,740,131	38,498,767
May-08	3,679,002	38,945,991
Jun-08	3,045,117	38,058,991
Jul-08	3,941,098	38,047,018
Aug-08	3,578,527	39,130,378
Sep-08	3,400,606	39,841,849
Oct-08	3,906,313	40,333,424
Nov-08	3,218,390	40,524,326
Dec-08	2,233,924	40,633,261
Jan-09	538,722	38,511,649
Feb-09	716,204	37,111,990
Mar-09	0	32,998,034
Apr-09	177,750	28,435,653
May-09	342,150	25,098,801
Jun-09	0	22,053,684
Jul-09	0	18,112,586
Aug-09	0	14,534,059
Sep-09	0	11,133,453
Oct-09	0	7,227,140
Nov-09	0	4,008,750
Dec-09	174,536	1,949,362
Jan-10	0	1,410,640
Feb-10	0	694,436
Mar-10	0	694,436
Apr-10	0	516,686
May-10	0	174,536
Jun-10	0	174,536
Jul-10	0	174,536

Aug-10	361,984	536,520
Sep-10	1,449,672	1,986,192
Oct-10	1,269,800	3,255,992
Nov-10	180,992	3,436,984
Dec-10	0	3,262,448
Jan-11	0	3,262,448
Feb-11	0	3,262,448
Mar-11	0	3,262,448
Apr-11	0	3,262,448
May-11	0	3,262,448
Jun-11	0	3,262,448
Jul-11	0	3,262,448
Aug-11	0	2,900,464
Sep-11	0	1,450,792
Oct-11	716,800	897,792
Nov-11	2,461,407	3,178,207
Dec-11	709,800	3,888,007
Jan-12	2,654,736	6,542,743
Feb-12	3,010,980	9,553,723
Mar-12	3,543,512	13,097,235
Apr-12	3,526,628	16,623,863
May-12	1,959,328	18,583,191
Jun-12	2,898,336	21,481,527
Jul-12	3,096,772	24,578,299
Aug-12	3,810,856	28,389,155
Sep-12	1,520,470	29,909,625
Oct-12	2,803,374	31,996,199
Nov-12	3,472,056	33,006,848
Dec-12	3,181,836	35,478,884
Jan-13	3,005,884	35,830,032
Feb-13	3,855,068	36,674,120
Mar-13	3,286,752	36,417,360
Apr-13	3,634,904	36,525,636
May-13	3,639,930	38,206,238
Jun-13	3,782,856	39,090,758
Jul-13	4,025,728	40,019,714
Aug-13	3,118,724	39,327,582
Sep-13	3,985,604	41,792,716
Oct-13	4,318,034	43,307,376
Nov-13	3,963,260	43,798,580
Dec-13	3,371,138	43,987,882
Jan-14[1]	3,942,746	44,924,744
Feb-14[1]	3,942,746	45,012,422
Mar-14	2,481,640	44,207,310
Apr-14	4,434,388	45,006,794
May-14	3,918,768	45,285,632
Jun-14	4,015,662	45,518,438
Jul-14	4,453,960	45,946,670
Aug-14	4,277,196	47,105,142
Sep-14	4,043,648	47,163,186
Oct-14	4,221,672	47,066,824
Nov-14	3,876,824	46,980,388
Dec-14	3,703,700	47,312,950
Jan-15	4,592,112	47,962,316
Feb-15	4,591,206	48,610,776
Mar-15	4,762,856	50,891,992
Apr-15	4,433,548	50,891,152
May-15	4,815,296	51,787,680
Jun-15	4,836,836	52,608,854
Jul-15	3,948,794	52,103,688
Aug-15	4,995,648	52,822,140
Sep-15	4,661,452	53,439,944
Oct-15	4,840,579	54,058,851
Nov-15	4,641,760	54,823,787
Dec-15	4,991,064	56,111,151
Maximum	**5,263,281**	**56,111,151**

1. Facility ownership change resulted in January and February 2014 periods monthly production data not available. Therefore, a monthly average based on March-December 2014 periods operation was used for January and February 2014 periods.

Appendix B
Emission Calculations

Table B-1. Boilers Actual Emission Factors

Pollutant	Emission Factor		Reference
Criteria			
PM	0.16	lb/MMBtu	1
Total PM_{10}	0.15	lb/MMBtu	2
Total $PM_{2.5}$	0.10	lb/MMBtu	3
SO_2	3.08E-03	lb/MMBtu	4
NO_X	0.203	lb/MMBtu	5
VOC	2.57E-03	lb/MMBtu	6
CO	0.502	lb/MMBtu	7
TRS, H_2S, H_2SO_4, Fluoride		Presumed negligible	
Lead	1.54E-05	lb/MMBtu	8
Greenhouse Gases			
CO_2	206.79	lb/MMBtu	9
CH_4	7.1E-02	lb/MMBtu	9
N_2O	9.3E-03	lb/MMBtu	9
CO_2e	211.32	lb/MMBtu	10

1. Filterable PM based on permit Condition 3.4.1.
2. Total PM_{10} based on 91% of filterable PM (per NCASI TB 1013 Table 5.2 - Mechanical Collector) plus Condensible PM (per NCASI TB 1013, Table 5.1 - Boilers w/ Multiclones Median).
3. Total PM_{10} based on 54% of filterable PM (per NCASI TB 1013 Table 5.2 - Mechanical Collector) plus Condensible PM (per NCASI TB 1013, Table 5.1 - Boilers w/ Multiclones Median).
4. NCASI TB 1013, Table 5.1 Median
5. NCASI TB 1013, Table 5.1, Wood w/o Significant EF Resin Content Median
6. NCASI TB 1013, Table 5.1 TNMHC as C Median
7. NCASI TB 1013, Table 5.1 Stoker Boiler Median
8. NCASI TB 1013, Table 4.3 Mechanical Collector Median
9. Per 40 CFR Part 98, Subpart C, Tables C-1 and C-2. The CO_2 emission factor is the default factor for wood and wood residuals, and the CH_4 and N_2O emission factors are the default factors for all solid biomass fuels.
10. The CO_2e factor is calculated based on the emission factors for CO_2, CH_4, and N_2O and the global warming potential (GWP) for each pollutant (effective January 1, 2014) per 40 CFR 98, Subpart A, Table A-1:

CO_2	1
CH_4	25
N_2O	298

Table B-2. Indirect Batch Kiln Emission Factors

Pollutant	Emission Factor	Reference
Criteria		
PM	0.031 lb/MBF	1
Total PM_{10}	0.031 lb/MBF	1, 2
Total $PM_{2.5}$	0.031 lb/MBF	1, 2
SO_2	N/A	
NO_X	N/A	
Total VOC	3.94 lb/MBF	3
CO	N/A	
TRS, H_2S, H_2SO_4, Fluoride	N/A	
Lead	N/A	
CO_2e	N/A	
HAPs		
Formaldehyde	0.016 lb/MBF	4
Methanol	0.20 lb/MBF	5

1. NCASI Environmental Resource Handbook for Wood Products, Table 3.3.1.2-1 Uncontrolled Filterable PM, median factor for batch indirect kilns.
2. Assumed PM = PM_{10} = $PM_{2.5}$
3. Total VOC (lb/MBF) is computed based on the following equation:
   VOC as terpene + methanol + formaldehyde = VOC as Carbon [lb/MBF] * 1.133 + (1 - 0.65) * Methanol [lb/MBF] + Formaldehyde [lb/MBF].
   VOC as Carbon 3.4 lb/MBF NCASI Environmental Resource Handbook for Wood Products Table 3.3.1.1-3 VOC Emissions Data for Wood Dryers, median factor for batch kilns, southern pine.
   The VOC as Carbon emission factor is multiplied by 1.133, which is the ratio of the molecular weight of pinene (C10H16, 136 amu) to the molecular weight of carbon in pinene (120 amu).
   The factors for methanol and formaldehyde are multiplied by the response factors, defined as the FIA response divided by the actual compound concentration. This methodology is supported in an EPA document entitled Interim VOC Measurement Protocol for the Wood Products Industry (July 2007).
4. NCASI Environmental Resource Handbook for Wood Products Table 3.3.1.1-4 Formaldehyde Emissions Data for Wood Dryers, median factor for indirect batch kilns.
5. NCASI Environmental Resource Handbook for Wood Products Table 3.3.1.1-3 Methanol Emissions from Wood Dryers, median factor for batch kilns, southern pine.

Table B-3. Direct-Fired Batch Kiln Emission Factors

Pollutant	Emission Factor		Reference
Criteria			
PM	0.39	lb/MBF	1
Total PM_{10}	0.51	lb/MBF	2
Total $PM_{2.5}$	0.43	lb/MBF	2
SO_2	0.025	lb/MMBtu	3
NO_X	0.30	lb/MBF	4
Total VOC	4.00	lb/MBF	5
CO	0.75	lb/MBF	6
TRS, H_2S, H_2SO_4, Fluoride	Presumed negligible		
Lead	1.54E-05	lb/MMBtu	7
Greenhouse Gases			
CO_2	206.79	lb/MMBtu	8
CH_4	7.1E-02	lb/MMBtu	8
N_2O	9.3E-03	lb/MMBtu	8
CO_2e	211.32	lb/MMBtu	9
HAPs			
Formaldehyde	0.078	lb/MBF	10
Methanol	0.20	lb/MBF	11

1. NCASI Environmental Resource Handbook for Wood Products, Table 3.3.1.2-1 Uncontrolled Filterable PM, median factor for batch direct wood fired kilns.
2. Presumed equal to PM test data. NCASI Handbook denotes small data set for PM_{10} results in median greater than PM estimates. Condensible PM data from Table 3.3.1.2-3 Uncontrolled Condensible PM Emissions, median factor for direct wood fired batch kilns.
3. AP-42 Table 1.6-2.
4. NCASI Environmental Resource Handbook for Wood Products, Table 3.3.1.1-1 NOx Emissions (Uncontrolled) from Direct-Fired Wood Dryers, median factor for batch wood-fired kilns.
3. Total VOC (lb/MBF) is computed based on the following equation:

   VOC as terpene + methanol + formaldehyde = VOC as Carbon [lb/MBF] * 1.133 + (1 - 0.65) * Methanol [lb/MBF] + Formaldehyde [lb/MBF].

   VOC as Carbon 3.4 lb/MBF NCASI Environmental Resource Handbook for Wood Products Table 3.3.1.1-3 VOC Emissions Data for Wood Dryers, median factor for batch kilns, southern pine.

   The VOC as Carbon emission factor is multiplied by 1.133, which is the ratio of the molecular weight of pinene (C10H16, 136 amu) to the molecular weight of carbon in pinene (120 amu).

   The factors for methanol and formaldehyde are multiplied by the response factors, defined as the FIA response divided by the actual compound concentration. This methodology is supported in an EPA document entitled Interim VOC Measurement Protocol for the Wood Products Industry (July 2007).
6. NCASI Environmental Resource Handbook for Wood Products, Table 3.3.1.1-2 CO Emissions from Wood Dryers, median factor for wood-fired batch kilns.
7. NCASI TB 1013, Table 4.3 Mechanical Collector Median
8. Per 40 CFR Part 98, Subpart C, Tables C-1 and C-2. The CO_2 emission factor is the default factor for wood and wood residuals, and the CH_4 and N_2O emission factors are the default factors for all solid biomass fuels.
9. The CO_2e factor is calculated based on the emission factors for CO_2, CH_4, and N_2O and the GWP for each pollutant (effective January 1, 2014) per 40 CFR 98, Subpart A, Table A-1:

CO_2	1
CH_4	25
N_2O	298

10. NCASI Environmental Resource Handbook for Wood Products Table 3.3.1.1-4 Formaldehyde Emissions Data for Wood Dryers, median factor for wood-fired batch kilns.
11. NCASI Environmental Resource Handbook for Wood Products Table 3.3.1.1-3 Methanol Emissions from Wood Dryers, median factor for batch kilns, southern pine.

Table B-4. Direct-Fired Continuous Kiln Emission Factors

Pollutant	Emission Factor		Reference
Criteria			
PM	0.38	lb/MBF	1
Total PM_{10}	0.51	lb/MBF	2
Total $PM_{2.5}$	0.37	lb/MBF	1
SO_2	0.025	lb/MMBtu	3
NO_X	0.36	lb/MBF	4
Total VOC	3.86	lb/MBF	5
CO	0.31	lb/MBF	6
TRS, H_2S, H_2SO_4, Fluoride		Presumed negligible	
Lead	1.54E-05	lb/MMBtu	7
Greenhouse Gases			
CO_2	206.79	lb/MMBtu	8
CH_4	7.1E-02	lb/MMBtu	8
N_2O	9.3E-03	lb/MMBtu	8
CO_2e	211.32	lb/MMBtu	9
HAPs			
Formaldehyde	0.051	lb/MBF	10
Methanol	0.190	lb/MBF	11

1. NCASI Environmental Resource Handbook for Wood Products, Table 3.3.1.2-1 Uncontrolled Filterable PM, median factor for continuous direct wood fired kilns.
2. Presumed equal to PM test data. NCASI Handbook denotes small data set for PM_{10} results in median greater than PM estimates. Condensible PM data from Table 3.3.1.2-3 Uncontrolled Condensible PM Emissions, median factor for direct wood fired batch kilns.
3. AP-42 Table 1.6-2.
4. NCASI Environmental Resource Handbook for Wood Products, Table 3.3.1.1-1 NOx Emissions (Uncontrolled) from Direct-Fired Wood Dryers, median factor for continuous wood-fired kilns.
3. Total VOC (lb/MBF) is computed based on the following equation:
   VOC as terpene + methanol + formaldehyde = VOC as Carbon [lb/MBF] * 1.133 + (1 - 0.65) * Methanol [lb/MBF] + Formaldehyde [lb/MBF].
   VOC as Carbon 3.3 lb/MBF NCASI Environmental Resource Handbook for Wood Products Table 3.3.1.1-3 VOC Emissions Data for Wood Dryers, median factor for continuous kilns, southern pine.
   The VOC as Carbon emission factor is multiplied by 1.133, which is the ratio of the molecular weight of pinene (C10H16, 136 amu) to the molecular weight of carbon in pinene (120 amu).
   The factors for methanol and formaldehyde are multiplied by the response factors, defined as the FIA response divided by the actual compound concentration. This methodology is supported in an EPA document entitled Interim VOC Measurement Protocol for the Wood Products Industry (July 2007).
6. NCASI Environmental Resource Handbook for Wood Products, Table 3.3.1.1-2 CO Emissions from Wood Dryers, median factor for wood-fired continuous kilns.
7. NCASI TB 1013, Table 4.3 Mechanical Collector Median
8. Per 40 CFR Part 98, Subpart C, Tables C-1 and C-2. The CO_2 emission factor is the default factor for wood and wood residuals, and the CH_4 and N_2O emission factors are the default factors for all solid biomass fuels.
9. The CO_2e factor is calculated based on the emission factors for CO_2, CH_4, and N_2O and the GWP for each pollutant (effective January 1, 2014) per 40 CFR 98, Subpart A, Table A-1:

CO_2	1
CH_4	25
N_2O	298

10. NCASI Environmental Resource Handbook for Wood Products Table 3.3.1.1-4 Formaldehyde Emissions Data for Wood Dryers, median factor for wood-fired continuous kilns.
11. NCASI Environmental Resource Handbook for Wood Products Table 3.3.1.1-3 Methanol Emissions from Wood Dryers, median factor for continuous kilns, southern pine.

Table B-5. Boiler 1 Fuel and Emissions Summary

	Boiler 1 Fuel (Tons)		Boiler 1 Fuel (MMBtu) [1]		Boiler 1 Total Monthly Actual Emissions (tons) [1]									Boiler 1 Total 24-Month Rolling Average Actual Annual Emissions (tons)								
Date	Monthly	12-Month	Monthly	12-Month	PM	Total PM_{10}	Total $PM_{2.5}$	SO_2	NO_x	VOC	CO	Pb	CO_2e	PM	Total PM_{10}	Total $PM_{2.5}$	SO_2	NO_x	CO	VOC	Pb	CO_2e
Jan-06	3,171		28,543		2.21	2.20	1.38	0.04	2.90	0.04	7.16	2.20E-04	3,016									
Feb-06	2,690		24,209		1.88	1.87	1.17	0.04	2.46	0.03	6.08	1.86E-04	2,558									
Mar-06	3,453		31,076		2.41	2.40	1.51	0.05	3.15	0.04	7.80	2.39E-04	3,283									
Apr-06	3,349		30,143		2.34	2.33	1.46	0.05	3.06	0.04	7.57	2.32E-04	3,185									
May-06	3,083		27,750		2.15	2.14	1.35	0.04	2.82	0.04	6.97	2.14E-04	2,932									
Jun-06	2,116		19,042		1.48	1.47	0.92	0.03	1.93	0.02	4.78	1.47E-04	2,012									
Jul-06	3,814		34,327		2.66	2.65	1.66	0.05	3.48	0.04	8.62	2.64E-04	3,627									
Aug-06	2,850		25,653		1.99	1.98	1.24	0.04	2.60	0.03	6.44	1.98E-04	2,710									
Sep-06	3,157		28,417		2.20	2.19	1.38	0.04	2.88	0.04	7.13	2.19E-04	3,003									
Oct-06	3,163		28,464		2.21	2.20	1.38	0.04	2.89	0.04	7.14	2.19E-04	3,007									
Nov-06	2,857		25,716		1.99	1.98	1.25	0.04	2.61	0.03	6.45	1.98E-04	2,717									
Dec-06	2,425	36,130	21,828	325,170	1.69	1.68	1.06	0.03	2.22	0.03	5.48	1.68E-04	2,306									
Jan-07	3,027	35,985	27,243	323,869	2.11	2.10	1.32	0.04	2.77	0.04	6.84	2.10E-04	2,878									
Feb-07	2,702	35,998	24,318	323,979	1.88	1.88	1.18	0.04	2.47	0.03	6.10	1.87E-04	2,569									
Mar-07	3,212	35,757	28,908	321,811	2.24	2.23	1.40	0.04	2.93	0.04	7.26	2.23E-04	3,054									
Apr-07	2,921	35,329	26,289	317,957	2.04	2.03	1.27	0.04	2.67	0.03	6.60	2.02E-04	2,778									
May-07	2,488	34,733	22,392	312,599	1.74	1.73	1.09	0.03	2.27	0.03	5.62	1.72E-04	2,366									
Jun-07	3,770	36,387	33,930	327,486	2.63	2.62	1.64	0.05	3.44	0.04	8.52	2.61E-04	3,585									
Jul-07	3,080	35,653	27,720	320,879	2.15	2.14	1.34	0.04	2.81	0.04	6.96	2.13E-04	2,929									
Aug-07	3,088	35,891	27,792	323,018	2.15	2.14	1.35	0.04	2.82	0.04	6.98	2.14E-04	2,936									
Sep-07	3,041	35,774	27,369	321,970	2.12	2.11	1.33	0.04	2.78	0.04	6.87	2.11E-04	2,892									
Oct-07	3,144	35,756	28,296	321,802	2.19	2.18	1.37	0.04	2.87	0.04	7.10	2.18E-04	2,990									
Nov-07	2,741	35,639	24,669	320,754	1.91	1.90	1.20	0.04	2.50	0.03	6.19	1.90E-04	2,606									
Dec-07	1,925	35,139	17,325	316,251	1.34	1.34	0.84	0.03	1.76	0.02	4.35	1.33E-04	1,831	**24.86**	**24.74**	**15.54**	**0.49**	**32.55**	**0.41**	**80.50**	**2.47E-03**	**33,886**
Jan-08	2,081	34,193	18,729	307,737	1.45	1.44	0.91	0.03	1.90	0.02	4.70	1.44E-04	1,979	24.47	24.36	15.31	0.49	32.05	0.41	79.27	2.43E-03	33,367
Feb-08	2,586	34,077	23,274	306,693	1.80	1.80	1.13	0.04	2.36	0.03	5.84	1.79E-04	2,459	24.44	24.33	15.28	0.49	32.01	0.41	79.15	2.43E-03	33,318
Mar-08	3,162	34,027	28,458	306,243	2.21	2.20	1.38	0.04	2.89	0.04	7.14	2.19E-04	3,007	24.34	24.23	15.22	0.48	31.87	0.40	78.82	2.42E-03	33,180
Apr-08	2,895	34,001	26,055	306,009	2.02	2.01	1.26	0.04	2.64	0.03	6.54	2.01E-04	2,753	24.18	24.07	15.12	0.48	31.67	0.40	78.31	2.40E-03	32,964
May-08	3,072	34,585	27,648	311,265	2.14	2.13	1.34	0.04	2.81	0.04	6.94	2.13E-04	2,921	24.17	24.06	15.12	0.48	31.66	0.40	78.29	2.40E-03	32,958
Jun-08	2,784	33,599	25,056	302,391	1.94	1.93	1.21	0.04	2.54	0.03	6.29	1.93E-04	2,647	24.41	24.30	15.27	0.49	31.97	0.40	79.05	2.43E-03	33,276
Jul-08	3,111	33,630	27,999	302,670	2.17	2.16	1.36	0.04	2.84	0.04	7.03	2.16E-04	2,958	24.16	24.05	15.11	0.48	31.65	0.40	78.26	2.40E-03	32,942
Aug-08	2,917	33,459	26,253	301,131	2.03	2.03	1.27	0.04	2.66	0.03	6.59	2.02E-04	2,774	24.19	24.07	15.13	0.48	31.68	0.40	78.33	2.40E-03	32,973
Sep-08	2,654	33,072	23,886	297,648	1.85	1.84	1.16	0.04	2.42	0.03	6.00	1.84E-04	2,524	24.01	23.90	15.02	0.48	31.45	0.40	77.76	2.39E-03	32,734
Oct-08	2,878	32,806	25,902	295,254	2.01	2.00	1.26	0.04	2.63	0.03	6.50	1.99E-04	2,737	23.91	23.80	14.95	0.48	31.32	0.40	77.44	2.38E-03	32,598
Nov-08	2,700	32,765	24,300	294,885	1.88	1.87	1.18	0.04	2.47	0.03	6.10	1.87E-04	2,567	23.86	23.75	14.92	0.47	31.24	0.40	77.26	2.37E-03	32,524
Dec-08	2,263	33,103	20,367	297,927	1.58	1.57	0.99	0.03	2.07	0.03	5.11	1.57E-04	2,152	23.80	23.69	14.88	0.47	31.17	0.39	77.08	2.36E-03	32,446
Jan-09	1,851	32,873	16,659	295,857	1.29	1.29	0.81	0.03	1.69	0.02	4.18	1.28E-04	1,760	23.39	23.28	14.63	0.46	30.63	0.39	75.75	2.32E-03	31,887
Feb-09	3,043	33,330	27,387	299,970	2.12	2.11	1.33	0.04	2.78	0.04	6.87	2.11E-04	2,894	23.51	23.40	14.70	0.47	30.79	0.39	76.14	2.34E-03	32,049
Mar-09	3,076	33,244	27,684	299,196	2.15	2.14	1.34	0.04	2.81	0.04	6.95	2.13E-04	2,925	23.46	23.35	14.67	0.47	30.73	0.39	75.98	2.33E-03	31,985
Apr-09	2,779	33,128	25,011	298,152	1.94	1.93	1.21	0.04	2.54	0.03	6.28	1.93E-04	2,643	23.41	23.30	14.64	0.47	30.66	0.39	75.82	2.33E-03	31,917
May-09	2,068	32,124	18,612	289,116	1.44	1.44	0.90	0.03	1.89	0.02	4.67	1.43E-04	1,967	23.26	23.16	14.55	0.46	30.47	0.39	75.35	2.31E-03	31,718
Jun-09	2,963	32,303	26,667	290,727	2.07	2.06	1.29	0.04	2.71	0.03	6.69	2.05E-04	2,818	22.98	22.88	14.37	0.46	30.10	0.38	74.44	2.28E-03	31,334
Jul-09	2,905	32,097	26,145	288,873	2.03	2.02	1.27	0.04	2.65	0.03	6.56	2.01E-04	2,762	22.92	22.82	14.34	0.46	30.02	0.38	74.24	2.28E-03	31,251
Aug-09	3,306	32,486	29,754	292,374	2.31	2.30	1.44	0.05	3.02	0.04	7.47	2.29E-04	3,144	23.00	22.89	14.38	0.46	30.12	0.38	74.48	2.28E-03	31,354
Sep-09	2,876	32,708	25,884	294,372	2.01	2.00	1.25	0.04	2.63	0.03	6.50	1.99E-04	2,735	22.94	22.84	14.35	0.46	30.05	0.38	74.30	2.28E-03	31,276
Oct-09	3,345	33,175	30,105	298,575	2.33	2.32	1.46	0.05	3.06	0.04	7.56	2.32E-04	3,181	23.01	22.91	14.39	0.46	30.14	0.38	74.53	2.29E-03	31,371
Nov-09	2,412	32,887	21,708	295,983	1.68	1.67	1.05	0.03	2.20	0.03	5.45	1.67E-04	2,294	22.90	22.79	14.32	0.45	29.99	0.38	74.15	2.27E-03	31,215
Dec-09	2,584	33,208	23,256	298,872	1.80	1.79	1.13	0.04	2.36	0.03	5.84	1.79E-04	2,457	23.13	23.02	14.46	0.46	30.29	0.38	74.90	2.30E-03	31,528
Jan-10	3,083	34,440	27,747	309,960	2.15	2.14	1.34	0.04	2.82	0.04	6.96	2.14E-04	2,932	23.48	23.37	14.68	0.47	30.75	0.39	76.03	2.33E-03	32,005
Feb-10	2,713	34,110	24,417	306,990	1.89	1.88	1.18	0.04	2.48	0.03	6.13	1.88E-04	2,580	23.52	23.41	14.71	0.47	30.80	0.39	76.17	2.34E-03	32,065
Mar-10	3,160	34,194	28,440	307,746	2.20	2.19	1.38	0.04	2.89	0.04	7.14	2.19E-04	3,005	23.52	23.41	14.71	0.47	30.80	0.39	76.17	2.34E-03	32,064
Apr-10	2,896	34,311	26,064	308,799	2.02	2.01	1.26	0.04	2.65	0.03	6.54	2.01E-04	2,754	23.52	23.41	14.71	0.47	30.80	0.39	76.17	2.34E-03	32,065
May-10	2,465	34,708	22,185	312,372	1.72	1.71	1.08	0.03	2.25	0.03	5.57	1.71E-04	2,344	23.31	23.20	14.58	0.46	30.53	0.39	75.49	2.32E-03	31,776
Jun-10	2,400	34,145	21,600	307,305	1.67	1.67	1.05	0.03	2.19	0.03	5.42	1.66E-04	2,282	23.17	23.07	14.49	0.46	30.35	0.38	75.05	2.30E-03	31,593
Jul-10	2,236	33,476	20,127	301,287	1.56	1.55	0.98	0.03	2.04	0.03	5.05	1.55E-04	2,127	22.87	22.76	14.30	0.45	29.95	0.38	74.07	2.27E-03	31,178
Aug-10	2,399	32,569	21,588	293,121	1.67	1.67	1.05	0.03	2.19	0.03	5.42	1.66E-04	2,281	22.69	22.58	14.19	0.45	29.71	0.38	73.48	2.25E-03	30,931
Sep-10	2,418	32,111	21,765	289,002	1.69	1.68	1.05	0.03	2.21	0.03	5.46	1.68E-04	2,300	22.61	22.50	14.14	0.45	29.61	0.37	73.21	2.25E-03	30,819
Oct-10	2,393	31,159	21,538	280,434	1.67	1.66	1.04	0.03	2.19	0.03	5.41	1.66E-04	2,276	22.44	22.33	14.03	0.45	29.38	0.37	72.67	2.23E-03	30,589
Nov-10	2,459	31,206	22,129	280,856	1.72	1.71	1.07	0.03	2.25	0.03	5.55	1.70E-04	2,338	22.35	22.25	13.98	0.44	29.27	0.37	72.39	2.22E-03	30,474
Dec-10	2,621	31,244	23,593	281,193	1.83	1.82	1.14	0.04	2.39	0.03	5.92	1.82E-04	2,493	22.48	22.37	14.06	0.45	29.44	0.37	72.80	2.23E-03	30,644
Jan-11	3,104	31,265	27,936	281,382	2.17	2.16	1.35	0.04	2.84	0.04	7.01	2.15E-04	2,952	22.91	22.81	14.33	0.46	30.01	0.38	74.21	2.28E-03	31,240

Feb-11	2,567	31,119	23,103	280,068	1.79	1.78	1.12	0.04	2.34	0.03	5.80	1.78E-04	2,441	22.75	22.64	14.23	0.45	29.79	0.38	73.68	2.26E-03	31,014
Mar-11	3,016	30,975	27,144	278,772	2.10	2.09	1.32	0.04	2.76	0.03	6.81	2.09E-04	2,868	22.73	22.62	14.21	0.45	29.77	0.38	73.61	2.26E-03	30,985
Apr-11	2,826	30,905	25,434	278,142	1.97	1.96	1.23	0.04	2.58	0.03	6.38	1.96E-04	2,687	22.74	22.64	14.22	0.45	29.79	0.38	73.66	2.26E-03	31,008
May-11	2,834	31,274	25,506	281,463	1.98	1.97	1.24	0.04	2.59	0.03	6.40	1.96E-04	2,695	23.01	22.91	14.39	0.46	30.14	0.38	74.53	2.29E-03	31,372
Jun-11	2,857	31,731	25,713	285,576	1.99	1.98	1.25	0.04	2.61	0.03	6.45	1.98E-04	2,717	22.97	22.87	14.37	0.46	30.09	0.38	74.41	2.28E-03	31,321
Jul-11	2,604	32,098	23,436	288,885	1.82	1.81	1.14	0.04	2.38	0.03	5.88	1.80E-04	2,476	22.87	22.76	14.30	0.45	29.95	0.38	74.07	2.27E-03	31,178
Aug-11	2,887	32,587	25,983	293,280	2.01	2.00	1.26	0.04	2.64	0.03	6.52	2.00E-04	2,745	22.72	22.62	14.21	0.45	29.76	0.38	73.59	2.26E-03	30,979
Sep-11	2,806	32,974	25,254	296,769	1.96	1.95	1.22	0.04	2.56	0.03	6.34	1.94E-04	2,668	22.70	22.59	14.20	0.45	29.73	0.38	73.51	2.26E-03	30,946
Oct-11	3,189	33,770	28,701	303,932	2.22	2.21	1.39	0.04	2.91	0.04	7.20	2.21E-04	3,032	22.64	22.54	14.16	0.45	29.66	0.38	73.34	2.25E-03	30,872
Nov-11	2,942	34,253	26,478	308,281	2.05	2.04	1.28	0.04	2.69	0.03	6.65	2.04E-04	2,798	22.83	22.72	14.28	0.45	29.90	0.38	73.94	2.27E-03	31,124
Dec-11	2,831	34,463	25,479	310,167	1.97	1.97	1.23	0.04	2.59	0.03	6.40	1.96E-04	2,692	22.92	22.81	14.33	0.46	30.01	0.38	74.22	2.28E-03	31,241
Jan-12	3,352	34,711	30,168	312,399	2.34	2.33	1.46	0.05	3.06	0.04	7.57	2.32E-04	3,187	23.01	22.90	14.39	0.46	30.13	0.38	74.52	2.29E-03	31,369
Feb-12	3,381	35,525	30,429	319,725	2.36	2.35	1.47	0.05	3.09	0.04	7.64	2.34E-04	3,215	23.24	23.14	14.54	0.46	30.44	0.39	75.27	2.31E-03	31,687
Mar-12	3,271	35,780	29,439	322,020	2.28	2.27	1.43	0.05	2.99	0.04	7.39	2.27E-04	3,110	23.28	23.17	14.56	0.46	30.49	0.39	75.40	2.31E-03	31,739
Apr-12	3,179	36,133	28,611	325,197	2.22	2.21	1.39	0.04	2.90	0.04	7.18	2.20E-04	3,023	23.38	23.27	14.62	0.46	30.62	0.39	75.72	2.32E-03	31,874
May-12	3,038	36,337	27,342	327,033	2.12	2.11	1.33	0.04	2.78	0.04	6.86	2.11E-04	2,889	23.58	23.47	14.75	0.47	30.88	0.39	76.37	2.34E-03	32,146
Jun-12	2,934	36,414	26,406	327,726	2.05	2.04	1.28	0.04	2.68	0.03	6.63	2.03E-04	2,790	23.77	23.66	14.86	0.47	31.13	0.39	76.97	2.36E-03	32,400
Jul-12	2,797	36,607	25,173	329,463	1.95	1.94	1.22	0.04	2.56	0.03	6.32	1.94E-04	2,660	23.96	23.85	14.99	0.48	31.38	0.40	77.60	2.38E-03	32,667
Aug-12	3,137	36,857	28,233	331,713	2.19	2.18	1.37	0.04	2.87	0.04	7.09	2.17E-04	2,983	24.22	24.11	15.15	0.48	31.72	0.40	78.44	2.41E-03	33,018
Sep-12	2,042	36,093	18,378	324,837	1.42	1.42	0.89	0.03	1.87	0.02	4.61	1.42E-04	1,942	24.09	23.98	15.06	0.48	31.55	0.40	78.01	2.39E-03	32,839
Oct-12	1,864	34,768	16,776	312,912	1.30	1.29	0.81	0.03	1.70	0.02	4.21	1.29E-04	1,773	23.90	23.79	14.95	0.47	31.30	0.40	77.41	2.37E-03	32,587
Nov-12	2,037	33,863	18,333	304,767	1.42	1.41	0.89	0.03	1.86	0.02	4.60	1.41E-04	1,937	23.76	23.65	14.86	0.47	31.11	0.39	76.94	2.36E-03	32,387
Dec-12	2,663	33,695	23,967	303,255	1.86	1.85	1.16	0.04	2.43	0.03	6.02	1.85E-04	2,532	23.77	23.66	14.87	0.47	31.13	0.39	76.98	2.36E-03	32,407
Jan-13	2,718	33,061	24,462	297,549	1.90	1.89	1.19	0.04	2.48	0.03	6.14	1.88E-04	2,585	23.64	23.53	14.78	0.47	30.95	0.39	76.55	2.35E-03	32,223
Feb-13	2,242	31,922	20,178	287,298	1.56	1.56	0.98	0.03	2.05	0.03	5.06	1.55E-04	2,132	23.52	23.41	14.71	0.47	30.81	0.39	76.18	2.34E-03	32,068
Mar-13	2,981	31,632	26,829	284,688	2.08	2.07	1.30	0.04	2.72	0.03	6.73	2.07E-04	2,835	23.51	23.40	14.70	0.47	30.79	0.39	76.14	2.34E-03	32,052
Apr-13	2,982	31,435	26,838	282,915	2.08	2.07	1.30	0.04	2.72	0.03	6.74	2.07E-04	2,836	23.56	23.46	14.74	0.47	30.86	0.39	76.32	2.34E-03	32,126
May-13	2,838	31,235	25,542	281,115	1.98	1.97	1.24	0.04	2.59	0.03	6.41	1.97E-04	2,699	23.57	23.46	14.74	0.47	30.86	0.39	76.32	2.34E-03	32,128
Jun-13	2,917	31,218	26,253	280,962	2.03	2.03	1.27	0.04	2.66	0.03	6.59	2.02E-04	2,774	23.59	23.48	14.75	0.47	30.89	0.39	76.39	2.34E-03	32,156
Jul-13	2,736	31,157	24,624	280,413	1.91	1.90	1.19	0.04	2.50	0.03	6.18	1.90E-04	2,602	23.63	23.52	14.78	0.47	30.95	0.39	76.54	2.35E-03	32,219
Aug-13	2,562	30,582	23,058	275,238	1.79	1.78	1.12	0.04	2.34	0.03	5.79	1.78E-04	2,436	23.52	23.41	14.71	0.47	30.80	0.39	76.17	2.34E-03	32,065
Sep-13	2,722	31,262	24,498	281,358	1.90	1.89	1.19	0.04	2.49	0.03	6.15	1.89E-04	2,588	23.49	23.38	14.69	0.47	30.76	0.39	76.08	2.33E-03	32,025
Oct-13	2,675	32,073	24,075	288,657	1.87	1.86	1.17	0.04	2.44	0.03	6.04	1.85E-04	2,544	23.31	23.20	14.58	0.46	30.53	0.39	75.50	2.32E-03	31,780
Nov-13	2,913	32,949	26,217	296,541	2.03	2.02	1.27	0.04	2.66	0.03	6.58	2.02E-04	2,770	23.30	23.19	14.57	0.46	30.52	0.39	75.46	2.32E-03	31,767
Dec-13	2,495	32,781	22,455	295,029	1.74	1.73	1.09	0.03	2.28	0.03	5.64	1.73E-04	2,373	23.18	23.08	14.50	0.46	30.36	0.38	75.08	2.30E-03	31,607
Jan-14	2,651	32,714	23,857	294,424	1.85	1.84	1.16	0.04	2.42	0.03	5.99	1.84E-04	2,521	22.94	22.83	14.35	0.46	30.04	0.38	74.29	2.28E-03	31,273
Feb-14	2,774	33,246	24,966	299,212	1.93	1.93	1.21	0.04	2.53	0.03	6.27	1.92E-04	2,638	22.73	22.62	14.21	0.45	29.77	0.38	73.61	2.26E-03	30,985
Mar-14	3,085	33,350	27,765	300,149	2.15	2.14	1.35	0.04	2.82	0.04	6.97	2.14E-04	2,934	22.66	22.56	14.17	0.45	29.68	0.38	73.40	2.25E-03	30,896
Apr-14	3,053	33,421	27,476	300,787	2.13	2.12	1.33	0.04	2.79	0.04	6.90	2.12E-04	2,903	22.62	22.51	14.15	0.45	29.62	0.38	73.25	2.25E-03	30,836
May-14	2,930	33,513	26,373	301,618	2.04	2.03	1.28	0.04	2.68	0.03	6.62	2.03E-04	2,787	22.58	22.48	14.12	0.45	29.57	0.37	73.13	2.24E-03	30,785
Jun-14	2,806	33,403	25,258	300,623	1.96	1.95	1.22	0.04	2.56	0.03	6.34	1.94E-04	2,669	22.54	22.43	14.09	0.45	29.52	0.37	72.99	2.24E-03	30,725
Jul-14	3,008	33,675	27,072	303,071	2.10	2.09	1.31	0.04	2.75	0.03	6.80	2.08E-04	2,860	22.61	22.51	14.14	0.45	29.61	0.37	73.23	2.25E-03	30,825
Aug-14	2,519	33,632	22,671	302,684	1.76	1.75	1.10	0.03	2.30	0.03	5.69	1.75E-04	2,395	22.39	22.29	14.01	0.45	29.33	0.37	72.53	2.23E-03	30,531
Sep-14	2,727	33,637	24,543	302,729	1.90	1.89	1.19	0.04	2.49	0.03	6.16	1.89E-04	2,593	22.63	22.53	14.16	0.45	29.64	0.38	73.30	2.25E-03	30,857
Oct-14	2,550	33,512	22,950	301,604	1.78	1.77	1.11	0.04	2.33	0.03	5.76	1.77E-04	2,425	22.87	22.77	14.30	0.45	29.96	0.38	74.08	2.27E-03	31,183
Nov-14	2,919	33,518	26,271	301,658	2.04	2.03	1.27	0.04	2.67	0.03	6.59	2.02E-04	2,776	23.18	23.07	14.50	0.46	30.36	0.38	75.07	2.30E-03	31,602
Dec-14	3,032	34,055	27,288	306,491	2.11	2.11	1.32	0.04	2.77	0.04	6.85	2.10E-04	2,883	23.31	23.20	14.58	0.46	30.53	0.39	75.49	2.32E-03	31,778
Jan-15		31,404	0	282,634	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0	22.36	22.26	13.99	0.44	29.29	0.37	72.42	2.22E-03	30,485
Feb-15		28,630	0	257,668	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0	21.58	21.48	13.50	0.43	28.26	0.36	69.89	2.14E-03	29,419
Mar-15		25,545	0	229,903	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0	20.54	20.45	12.85	0.41	26.90	0.34	66.52	2.04E-03	28,002
Apr-15		22,492	0	202,427	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0	19.50	19.41	12.20	0.39	25.54	0.32	63.15	1.94E-03	26,584
May-15		19,561	0	176,053	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0	18.51	18.42	11.58	0.37	24.24	0.31	59.95	1.84E-03	25,235
Jun-15		16,755	0	150,795	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0	17.49	17.41	10.94	0.35	22.91	0.29	56.65	1.74E-03	23,848
Jul-15		13,747	0	123,723	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0	16.54	16.46	10.34	0.33	21.66	0.27	53.56	1.64E-03	22,547
Aug-15		11,228	0	101,052	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0	15.64	15.57	9.78	0.31	20.49	0.26	50.67	1.55E-03	21,329
Sep-15		8,501	0	76,509	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0	14.70	14.63	9.19	0.29	19.25	0.24	47.59	1.46E-03	20,035
Oct-15		5,951	0	53,559	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0	13.76	13.70	8.61	0.27	18.02	0.23	44.57	1.37E-03	18,763
Nov-15		3,032	0	27,288	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0	12.75	12.69	7.97	0.25	16.69	0.21	41.28	1.27E-03	17,378
Dec-15		0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0	11.88	11.82	7.43	0.24	15.55	0.20	38.46	1.18E-03	16,192
Maximum	**3,814**	**36,857**	**34,327**	**331,713**	**2.66**	**2.65**	**1.66**	**0.05**	**3.48**	**0.04**	**8.62**	**2.64E-04**	**3,627**	**24.86**	**24.74**	**15.54**	**0.49**	**32.55**	**0.41**	**80.50**	**2.47E-03**	**33,886**

1. Average heat capacity of fuel 4,500 Btu/lb

Table B-6. Boiler 2 Fuel and Emissions Summary

Date	Boiler 2 Fuel (Tons)		Boiler 2 Fuel (MMBtu) [1]		Boiler 2 Total Monthly Actual Emissions (tons) [1]									Boiler 2 Total 24-Month Rolling Average Actual Annual Emissions (tons)								
	Monthly	12-Month	Monthly	12-Month	PM	Total PM_{10}	Total $PM_{2.5}$	SO_2	NO_x	VOC	CO	Pb	CO_2e	PM	Total PM_{10}	Total $PM_{2.5}$	SO_2	NO_x	CO	VOC	Pb	CO_2e
Jan-06	2,689		24,199		1.88	1.87	1.17	0.04	2.46	0.03	6.07	1.86E-04	2,557									
Feb-06	2,704		24,332		1.89	1.88	1.18	0.04	2.47	0.03	6.11	1.87E-04	2,571									
Mar-06	2,930		26,366		2.04	2.03	1.28	0.04	2.68	0.03	6.62	2.03E-04	2,786									
Apr-06	2,729		24,563		1.90	1.89	1.19	0.04	2.49	0.03	6.17	1.89E-04	2,595									
May-06	2,249		20,238		1.57	1.56	0.98	0.03	2.05	0.03	5.08	1.56E-04	2,138									
Jun-06	2,186		19,670		1.52	1.52	0.95	0.03	2.00	0.03	4.94	1.51E-04	2,078									
Jul-06	2,235		20,114		1.56	1.55	0.97	0.03	2.04	0.03	5.05	1.55E-04	2,125									
Aug-06	2,836		25,525		1.98	1.97	1.24	0.04	2.59	0.03	6.41	1.97E-04	2,697									
Sep-06	2,861		25,753		2.00	1.99	1.25	0.04	2.61	0.03	6.46	1.98E-04	2,721									
Oct-06	2,529		22,759		1.76	1.76	1.10	0.04	2.31	0.03	5.71	1.75E-04	2,405									
Nov-06	2,745		24,706		1.91	1.91	1.20	0.04	2.51	0.03	6.20	1.90E-04	2,610									
Dec-06	1,982	30,674	17,837	276,063	1.38	1.38	0.86	0.03	1.81	0.02	4.48	1.37E-04	1,885									
Jan-07	2,609	30,594	23,481	275,344	1.82	1.81	1.14	0.04	2.38	0.03	5.89	1.81E-04	2,481									
Feb-07	2,616	30,506	23,544	274,557	1.82	1.82	1.14	0.04	2.39	0.03	5.91	1.81E-04	2,488									
Mar-07	2,976	30,553	26,784	274,975	2.08	2.07	1.30	0.04	2.72	0.03	6.72	2.06E-04	2,830									
Apr-07	2,759	30,582	24,831	275,242	1.92	1.92	1.20	0.04	2.52	0.03	6.23	1.91E-04	2,624									
May-07	2,687	31,021	24,183	279,187	1.87	1.87	1.17	0.04	2.45	0.03	6.07	1.86E-04	2,555									
Jun-07	2,613	31,448	23,517	283,034	1.82	1.81	1.14	0.04	2.39	0.03	5.90	1.81E-04	2,485									
Jul-07	2,464	31,677	22,176	285,097	1.72	1.71	1.07	0.03	2.25	0.03	5.57	1.71E-04	2,343									
Aug-07	2,944	31,785	26,496	286,067	2.05	2.04	1.28	0.04	2.69	0.03	6.65	2.04E-04	2,800									
Sep-07	2,873	31,797	25,857	286,171	2.00	1.99	1.25	0.04	2.62	0.03	6.49	1.99E-04	2,732									
Oct-07	3,007	32,275	27,063	290,475	2.10	2.09	1.31	0.04	2.75	0.03	6.79	2.08E-04	2,859									
Nov-07	2,932	32,462	26,388	292,157	2.05	2.04	1.28	0.04	2.68	0.03	6.62	2.03E-04	2,788									
Dec-07	2,318	32,798	20,862	295,182	1.62	1.61	1.01	0.03	2.12	0.03	5.24	1.61E-04	2,204	22.14	22.03	13.84	0.44	28.99	0.37	71.69	2.20E-03	30,178
Jan-08	1,891	32,080	17,019	288,720	1.32	1.31	0.82	0.03	1.73	0.02	4.27	1.31E-04	1,798	21.86	21.76	13.67	0.43	28.63	0.36	70.79	2.17E-03	29,799
Feb-08	2,348	31,812	21,132	286,308	1.64	1.63	1.02	0.03	2.14	0.03	5.30	1.63E-04	2,233	21.73	21.63	13.59	0.43	28.46	0.36	70.39	2.16E-03	29,630
Mar-08	2,789	31,625	25,101	284,625	1.95	1.94	1.22	0.04	2.55	0.03	6.30	1.93E-04	2,652	21.68	21.59	13.56	0.43	28.40	0.36	70.23	2.15E-03	29,563
Apr-08	2,859	31,725	25,731	285,525	1.99	1.99	1.25	0.04	2.61	0.03	6.46	1.98E-04	2,719	21.73	21.63	13.59	0.43	28.46	0.36	70.38	2.16E-03	29,625
May-08	2,694	31,732	24,246	285,588	1.88	1.87	1.18	0.04	2.46	0.03	6.09	1.87E-04	2,562	21.89	21.78	13.69	0.43	28.66	0.36	70.88	2.17E-03	29,837
Jun-08	2,490	31,609	22,410	284,481	1.74	1.73	1.09	0.03	2.27	0.03	5.62	1.73E-04	2,368	21.99	21.89	13.75	0.44	28.80	0.36	71.22	2.18E-03	29,981
Jul-08	2,568	31,713	23,112	285,417	1.79	1.78	1.12	0.04	2.35	0.03	5.80	1.78E-04	2,442	22.11	22.01	13.83	0.44	28.95	0.37	71.60	2.20E-03	30,140
Aug-08	2,962	31,731	26,658	285,579	2.07	2.06	1.29	0.04	2.71	0.03	6.69	2.05E-04	2,817	22.15	22.05	13.85	0.44	29.01	0.37	71.74	2.20E-03	30,200
Sep-08	2,596	31,454	23,364	283,086	1.81	1.80	1.13	0.04	2.37	0.03	5.86	1.80E-04	2,469	22.06	21.96	13.80	0.44	28.89	0.37	71.44	2.19E-03	30,073
Oct-08	2,539	30,986	22,851	278,874	1.77	1.76	1.11	0.04	2.32	0.03	5.74	1.76E-04	2,414	22.06	21.96	13.80	0.44	28.89	0.37	71.45	2.19E-03	30,078
Nov-08	2,405	30,459	21,645	274,131	1.68	1.67	1.05	0.03	2.20	0.03	5.43	1.67E-04	2,287	21.94	21.84	13.72	0.44	28.74	0.36	71.07	2.18E-03	29,917
Dec-08	2,089	30,230	18,801	272,070	1.46	1.45	0.91	0.03	1.91	0.02	4.72	1.45E-04	1,986	21.98	21.88	13.75	0.44	28.79	0.36	71.19	2.18E-03	29,967
Jan-09	1,093	29,432	9,837	264,888	0.76	0.76	0.48	0.02	1.00	0.01	2.47	7.57E-05	1,039	21.45	21.35	13.42	0.43	28.10	0.36	69.48	2.13E-03	29,247
Feb-09	2,530	29,614	22,770	266,526	1.76	1.76	1.10	0.04	2.31	0.03	5.72	1.75E-04	2,406	21.42	21.32	13.40	0.43	28.06	0.36	69.38	2.13E-03	29,206
Mar-09	2,428	29,253	21,852	263,277	1.69	1.69	1.06	0.03	2.22	0.03	5.48	1.68E-04	2,309	21.23	21.13	13.28	0.42	27.81	0.35	68.76	2.11E-03	28,945
Apr-09	2,461	28,855	22,149	259,695	1.72	1.71	1.07	0.03	2.25	0.03	5.56	1.71E-04	2,340	21.13	21.03	13.21	0.42	27.67	0.35	68.43	2.10E-03	28,803
May-09	2,815	28,976	25,335	260,784	1.96	1.95	1.23	0.04	2.57	0.03	6.36	1.95E-04	2,677	21.17	21.07	13.24	0.42	27.73	0.35	68.57	2.10E-03	28,864
Jun-09	2,413	28,899	21,717	260,091	1.68	1.68	1.05	0.03	2.20	0.03	5.45	1.67E-04	2,295	21.10	21.01	13.20	0.42	27.64	0.35	68.34	2.10E-03	28,769
Jul-09	2,527	28,858	22,743	259,722	1.76	1.75	1.10	0.04	2.31	0.03	5.71	1.75E-04	2,403	21.12	21.03	13.21	0.42	27.67	0.35	68.41	2.10E-03	28,799
Aug-09	2,499	28,395	22,491	255,555	1.74	1.74	1.09	0.03	2.28	0.03	5.65	1.73E-04	2,376	20.97	20.87	13.11	0.42	27.46	0.35	67.91	2.08E-03	28,588
Sep-09	2,608	28,407	23,472	255,663	1.82	1.81	1.14	0.04	2.38	0.03	5.89	1.81E-04	2,480	20.88	20.78	13.06	0.41	27.34	0.35	67.61	2.07E-03	28,462
Oct-09	2,391	28,259	21,519	254,331	1.67	1.66	1.04	0.03	2.18	0.03	5.40	1.66E-04	2,274	20.66	20.57	12.92	0.41	27.06	0.34	66.92	2.05E-03	28,169
Nov-09	1,445	27,299	13,005	245,691	1.01	1.00	0.63	0.02	1.32	0.02	3.26	1.00E-04	1,374	20.14	20.05	12.60	0.40	26.38	0.33	65.24	2.00E-03	27,462
Dec-09	2,227	27,437	20,043	246,933	1.55	1.55	0.97	0.03	2.03	0.03	5.03	1.54E-04	2,118	20.11	20.02	12.58	0.40	26.34	0.33	65.13	2.00E-03	27,418
Jan-10	2,539	28,883	22,851	259,947	1.77	1.76	1.11	0.04	2.32	0.03	5.74	1.76E-04	2,414	20.34	20.24	12.72	0.40	26.64	0.34	65.87	2.02E-03	27,727
Feb-10	2,220	28,573	19,980	257,157	1.55	1.54	0.97	0.03	2.03	0.03	5.01	1.54E-04	2,111	20.29	20.20	12.69	0.40	26.58	0.34	65.72	2.02E-03	27,666
Mar-10	2,624	28,769	23,616	258,921	1.83	1.82	1.14	0.04	2.40	0.03	5.93	1.82E-04	2,495	20.24	20.14	12.66	0.40	26.50	0.34	65.54	2.01E-03	27,587
Apr-10	2,304	28,612	20,736	257,508	1.61	1.60	1.01	0.03	2.10	0.03	5.20	1.60E-04	2,191	20.04	19.95	12.53	0.40	26.25	0.33	64.91	1.99E-03	27,323
May-10	2,528	28,325	22,752	254,925	1.76	1.76	1.10	0.04	2.31	0.03	5.71	1.75E-04	2,404	19.98	19.89	12.50	0.40	26.17	0.33	64.72	1.99E-03	27,244
Jun-10	2,379	28,291	21,411	254,619	1.66	1.65	1.04	0.03	2.17	0.03	5.37	1.65E-04	2,262	19.95	19.85	12.47	0.40	26.12	0.33	64.60	1.98E-03	27,192
Jul-10	2,206	27,970	19,853	251,729	1.54	1.53	0.96	0.03	2.02	0.03	4.98	1.53E-04	2,098	19.82	19.73	12.40	0.39	25.96	0.33	64.19	1.97E-03	27,020
Aug-10	2,303	27,774	20,728	249,966	1.61	1.60	1.00	0.03	2.10	0.03	5.20	1.60E-04	2,190	19.59	19.50	12.25	0.39	25.66	0.32	63.44	1.95E-03	26,706
Sep-10	2,436	27,602	21,923	248,417	1.70	1.69	1.06	0.03	2.23	0.03	5.50	1.69E-04	2,316	19.53	19.44	12.22	0.39	25.58	0.32	63.26	1.94E-03	26,630
Oct-10	2,421	27,632	21,786	248,684	1.69	1.68	1.06	0.03	2.21	0.03	5.47	1.68E-04	2,302	19.49	19.40	12.19	0.39	25.53	0.32	63.13	1.94E-03	26,574
Nov-10	2,117	28,303	19,049	254,728	1.48	1.47	0.92	0.03	1.93	0.02	4.78	1.47E-04	2,013	19.39	19.30	12.13	0.39	25.40	0.32	62.80	1.93E-03	26,437
Dec-10	2,237	28,313	20,137	254,821	1.56	1.55	0.98	0.03	2.04	0.03	5.05	1.55E-04	2,128	19.44	19.35	12.16	0.39	25.46	0.32	62.97	1.93E-03	26,507
Jan-11	2,637	28,411	23,733	255,703	1.84	1.83	1.15	0.04	2.41	0.03	5.96	1.83E-04	2,508	19.98	19.89	12.50	0.40	26.17	0.33	64.71	1.99E-03	27,241
Feb-11	2,530	28,721	22,770	258,493	1.76	1.76	1.10	0.04	2.31	0.03	5.72	1.75E-04	2,406	19.98	19.89	12.50	0.40	26.17	0.33	64.71	1.99E-03	27,241
Mar-11	2,470	28,567	22,230	257,107	1.72	1.71	1.08	0.03	2.26	0.03	5.58	1.71E-04	2,349	20.00	19.90	12.51	0.40	26.19	0.33	64.76	1.99E-03	27,261

Apr-11	2,481	28,744	22,329	258,700	1.73	1.72	1.08	0.03	2.27	0.03	5.60	1.72E-04	2,359	20.00	19.91	12.51	0.40	26.20	0.33	64.78	1.99E-03	27,271
May-11	2,574	28,790	23,166	259,114	1.80	1.79	1.12	0.04	2.35	0.03	5.81	1.78E-04	2,448	19.92	19.83	12.46	0.40	26.09	0.33	64.51	1.98E-03	27,156
Jun-11	2,200	28,611	19,800	257,503	1.53	1.53	0.96	0.03	2.01	0.03	4.97	1.52E-04	2,092	19.84	19.75	12.41	0.39	25.99	0.33	64.27	1.97E-03	27,055
Jul-11	2,506	28,912	22,554	260,204	1.75	1.74	1.09	0.03	2.29	0.03	5.66	1.74E-04	2,383	19.84	19.75	12.41	0.39	25.98	0.33	64.25	1.97E-03	27,045
Aug-11	2,348	28,956	21,132	260,608	1.64	1.63	1.02	0.03	2.14	0.03	5.30	1.63E-04	2,233	19.78	19.69	12.37	0.39	25.91	0.33	64.08	1.97E-03	26,973
Sep-11	2,628	29,149	23,652	262,338	1.83	1.82	1.15	0.04	2.40	0.03	5.94	1.82E-04	2,499	19.79	19.70	12.38	0.39	25.92	0.33	64.10	1.97E-03	26,983
Oct-11	2,687	29,415	24,183	264,735	1.87	1.87	1.17	0.04	2.45	0.03	6.07	1.86E-04	2,555	19.89	19.80	12.44	0.40	26.06	0.33	64.43	1.98E-03	27,123
Nov-11	2,329	29,627	20,961	266,647	1.62	1.62	1.02	0.03	2.13	0.03	5.26	1.61E-04	2,215	20.20	20.11	12.64	0.40	26.46	0.33	65.43	2.01E-03	27,544
Dec-11	2,592	29,982	23,328	269,838	1.81	1.80	1.13	0.04	2.37	0.03	5.86	1.80E-04	2,465	20.33	20.24	12.72	0.40	26.63	0.34	65.84	2.02E-03	27,717
Jan-12	2,606	29,951	23,454	269,559	1.82	1.81	1.14	0.04	2.38	0.03	5.89	1.81E-04	2,478	20.35	20.26	12.73	0.40	26.66	0.34	65.92	2.02E-03	27,749
Feb-12	2,239	29,660	20,151	266,940	1.56	1.55	0.98	0.03	2.05	0.03	5.06	1.55E-04	2,129	20.36	20.27	12.73	0.40	26.67	0.34	65.94	2.02E-03	27,758
Mar-12	2,338	29,528	21,042	265,752	1.63	1.62	1.02	0.03	2.14	0.03	5.28	1.62E-04	2,223	20.26	20.17	12.67	0.40	26.54	0.34	65.62	2.01E-03	27,622
Apr-12	1,277	28,324	11,493	254,916	0.89	0.89	0.56	0.02	1.17	0.01	2.88	8.85E-05	1,214	19.90	19.81	12.45	0.40	26.07	0.33	64.46	1.98E-03	27,134
May-12	2,899	28,649	26,091	257,841	2.02	2.01	1.26	0.04	2.65	0.03	6.55	2.01E-04	2,757	20.03	19.94	12.53	0.40	26.24	0.33	64.88	1.99E-03	27,310
Jun-12	2,755	29,204	24,795	262,836	1.92	1.91	1.20	0.04	2.52	0.03	6.22	1.91E-04	2,620	20.16	20.07	12.61	0.40	26.41	0.33	65.30	2.00E-03	27,489
Jul-12	1,657	28,355	14,913	255,195	1.16	1.15	0.72	0.02	1.51	0.02	3.74	1.15E-04	1,576	19.97	19.88	12.49	0.40	26.16	0.33	64.68	1.98E-03	27,228
Aug-12	2,252	28,259	20,268	254,331	1.57	1.56	0.98	0.03	2.06	0.03	5.09	1.56E-04	2,141	19.95	19.86	12.48	0.40	26.13	0.33	64.62	1.98E-03	27,204
Sep-12	3,319	28,950	29,871	260,550	2.32	2.30	1.45	0.05	3.03	0.04	7.50	2.30E-04	3,156	20.26	20.17	12.67	0.40	26.54	0.34	65.62	2.01E-03	27,624
Oct-12	1,630	27,893	14,670	251,037	1.14	1.13	0.71	0.02	1.49	0.02	3.68	1.13E-04	1,550	19.99	19.89	12.50	0.40	26.18	0.33	64.73	1.99E-03	27,248
Nov-12	1,913	27,477	17,217	247,293	1.33	1.33	0.83	0.03	1.75	0.02	4.32	1.33E-04	1,819	19.92	19.82	12.46	0.40	26.08	0.33	64.50	1.98E-03	27,151
Dec-12	2,663	27,548	23,967	247,932	1.86	1.85	1.16	0.04	2.43	0.03	6.02	1.85E-04	2,532	20.06	19.97	12.55	0.40	26.28	0.33	64.98	1.99E-03	27,353
Jan-13	2,670	27,612	24,030	248,508	1.86	1.85	1.16	0.04	2.44	0.03	6.03	1.85E-04	2,539	20.08	19.98	12.56	0.40	26.29	0.33	65.02	1.99E-03	27,369
Feb-13	2,647	28,020	23,823	252,180	1.85	1.84	1.15	0.04	2.42	0.03	5.98	1.83E-04	2,517	20.12	20.02	12.58	0.40	26.35	0.33	65.15	2.00E-03	27,425
Mar-13	2,700	28,382	24,300	255,438	1.88	1.87	1.18	0.04	2.47	0.03	6.10	1.87E-04	2,567	20.20	20.10	12.63	0.40	26.45	0.33	65.41	2.01E-03	27,534
Apr-13	2,602	29,707	23,418	267,363	1.81	1.81	1.14	0.04	2.38	0.03	5.88	1.80E-04	2,474	20.24	20.15	12.66	0.40	26.51	0.34	65.55	2.01E-03	27,592
May-13	2,747	29,555	24,723	265,995	1.92	1.91	1.20	0.04	2.51	0.03	6.21	1.90E-04	2,612	20.30	20.21	12.70	0.40	26.58	0.34	65.74	2.02E-03	27,674
Jun-13	2,192	28,992	19,728	260,928	1.53	1.52	0.96	0.03	2.00	0.03	4.95	1.52E-04	2,084	20.30	20.20	12.69	0.40	26.58	0.34	65.73	2.02E-03	27,670
Jul-13	2,912	30,247	26,208	272,223	2.03	2.02	1.27	0.04	2.66	0.03	6.58	2.02E-04	2,769	20.44	20.34	12.78	0.41	26.77	0.34	66.19	2.03E-03	27,863
Aug-13	2,554	30,549	22,986	274,941	1.78	1.77	1.11	0.04	2.33	0.03	5.77	1.77E-04	2,429	20.51	20.42	12.83	0.41	26.86	0.34	66.42	2.04E-03	27,961
Sep-13	2,735	29,965	24,615	269,685	1.91	1.90	1.19	0.04	2.50	0.03	6.18	1.90E-04	2,601	20.55	20.45	12.85	0.41	26.91	0.34	66.54	2.04E-03	28,012
Oct-13	2,855	31,190	25,695	280,710	1.99	1.98	1.25	0.04	2.61	0.03	6.45	1.98E-04	2,715	20.61	20.51	12.89	0.41	26.99	0.34	66.73	2.05E-03	28,092
Nov-13	3,062	32,339	27,558	291,051	2.14	2.13	1.34	0.04	2.80	0.04	6.92	2.12E-04	2,912	20.86	20.77	13.05	0.41	27.32	0.35	67.56	2.07E-03	28,440
Dec-13	2,715	32,391	24,435	291,519	1.89	1.89	1.18	0.04	2.48	0.03	6.13	1.88E-04	2,582	20.90	20.81	13.07	0.42	27.38	0.35	67.70	2.08E-03	28,499
Jan-14	2,844	32,565	25,594	293,083	1.98	1.97	1.24	0.04	2.60	0.03	6.42	1.97E-04	2,704	20.99	20.89	13.13	0.42	27.49	0.35	67.97	2.09E-03	28,612
Feb-14	2,611	32,529	23,496	292,757	1.82	1.81	1.14	0.04	2.38	0.03	5.90	1.81E-04	2,483	21.12	21.02	13.21	0.42	27.66	0.35	68.39	2.10E-03	28,789
Mar-14	3,263	33,091	29,364	297,821	2.28	2.27	1.42	0.05	2.98	0.04	7.37	2.26E-04	3,103	21.44	21.34	13.41	0.43	28.08	0.36	69.43	2.13E-03	29,228
Apr-14	2,752	33,242	24,772	299,174	1.92	1.91	1.20	0.04	2.51	0.03	6.22	1.91E-04	2,617	21.95	21.85	13.73	0.44	28.75	0.36	71.10	2.18E-03	29,930
May-14	3,111	33,605	27,995	302,447	2.17	2.16	1.36	0.04	2.84	0.04	7.03	2.16E-04	2,958	22.03	21.93	13.78	0.44	28.85	0.37	71.34	2.19E-03	30,030
Jun-14	2,797	34,211	25,176	307,895	1.95	1.94	1.22	0.04	2.56	0.03	6.32	1.94E-04	2,660	22.04	21.94	13.79	0.44	28.87	0.37	71.39	2.19E-03	30,050
Jul-14	3,046	34,345	27,414	309,101	2.12	2.11	1.33	0.04	2.78	0.04	6.88	2.11E-04	2,897	22.53	22.42	14.09	0.45	29.50	0.37	72.96	2.24E-03	30,711
Aug-14	2,840	34,631	25,560	311,675	1.98	1.97	1.24	0.04	2.59	0.03	6.42	1.97E-04	2,701	22.73	22.63	14.22	0.45	29.77	0.38	73.62	2.26E-03	30,990
Sep-14	2,911	34,807	26,199	313,259	2.03	2.02	1.27	0.04	2.66	0.03	6.58	2.02E-04	2,768	22.59	22.49	14.13	0.45	29.58	0.37	73.16	2.24E-03	30,796
Oct-14	3,104	35,056	27,936	315,500	2.17	2.16	1.35	0.04	2.84	0.04	7.01	2.15E-04	2,952	23.10	23.00	14.45	0.46	30.26	0.38	74.82	2.30E-03	31,497
Nov-14	2,606	34,600	23,454	311,396	1.82	1.81	1.14	0.04	2.38	0.03	5.89	1.81E-04	2,478	23.34	23.24	14.60	0.46	30.57	0.39	75.61	2.32E-03	31,827
Dec-14	3,357	35,242	30,213	317,174	2.34	2.33	1.46	0.05	3.07	0.04	7.58	2.33E-04	3,192	**23.59**	**23.48**	**14.75**	**0.47**	**30.89**	**0.39**	**76.39**	**2.34E-03**	**32,157**
Jan-15		32,398	0	291,580	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0	22.66	22.55	14.17	0.45	29.67	0.38	73.38	2.25E-03	30,887
Feb-15		29,787	0	268,083	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0	21.73	21.63	13.59	0.43	28.46	0.36	70.39	2.16E-03	29,629
Mar-15		26,524	0	238,719	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0	20.79	20.70	13.00	0.41	27.23	0.34	67.34	2.07E-03	28,345
Apr-15		23,772	0	213,947	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0	19.88	19.79	12.44	0.40	26.04	0.33	64.40	1.98E-03	27,108
May-15		20,661	0	185,952	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0	18.93	18.84	11.84	0.38	24.79	0.31	61.29	1.88E-03	25,802
Jun-15		17,864	0	160,776	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0	18.16	18.08	11.36	0.36	23.79	0.30	58.82	1.80E-03	24,759
Jul-15		14,818	0	133,362	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0	17.15	17.07	10.72	0.34	22.45	0.28	55.53	1.70E-03	23,375
Aug-15		11,978	0	107,802	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0	16.25	16.18	10.17	0.32	21.29	0.27	52.64	1.61E-03	22,161
Sep-15		9,067	0	81,603	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0	15.30	15.23	9.57	0.30	20.04	0.25	49.56	1.52E-03	20,860
Oct-15		5,963	0	53,667	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0	14.31	14.24	8.95	0.28	18.74	0.24	46.33	1.42E-03	19,503
Nov-15		3,357	0	30,213	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0	13.24	13.18	8.28	0.26	17.34	0.22	42.87	1.32E-03	18,047
Dec-15		0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00E+00	0	12.29	12.23	7.69	0.24	16.10	0.20	39.81	1.22E-03	16,756
Maximum	**3,357**	**35,242**	**30,213**	**317,174**	**2.34**	**2.33**	**1.46**	**0.05**	**3.07**	**0.04**	**7.58**	**2.33E-04**	**3,192**	**23.59**	**23.48**	**14.75**	**0.47**	**30.89**	**0.39**	**76.39**	**2.34E-03**	**32,157**

1. Average heat capacity of fuel 4,500 Btu/lb

Table B-7. Kiln 1 (Steam Heated Batch Kiln) Production and Emissions Summary

	Kiln 1 (Board Feet)		Kiln 1 Total Monthly Actual Emissions (tons) [1]									Kiln 1 Total 24-Month Rolling Average Actual Annual Emissions (tons)								
Date	Monthly	12-Month	PM	Total PM_{10}	Total $PM_{2.5}$	SO_2	NO_x	VOC	CO	Pb	CO_2e	PM	Total PM_{10}	Total $PM_{2.5}$	SO_2	NO_x	CO	VOC	Pb	CO_2e
Jan-06	4,442,600		0.07	0.07	0.07	N/A	N/A	8.75	N/A	N/A	N/A									
Feb-06	3,789,695		0.06	0.06	0.06	N/A	N/A	7.46	N/A	N/A	N/A									
Mar-06	3,898,216		0.06	0.06	0.06	N/A	N/A	7.68	N/A	N/A	N/A									
Apr-06	4,863,330		0.08	0.08	0.08	N/A	N/A	9.58	N/A	N/A	N/A									
May-06	3,837,469		0.06	0.06	0.06	N/A	N/A	7.56	N/A	N/A	N/A									
Jun-06	4,243,081		0.07	0.07	0.07	N/A	N/A	8.36	N/A	N/A	N/A									
Jul-06	2,072,903		0.03	0.03	0.03	N/A	N/A	4.08	N/A	N/A	N/A									
Aug-06	2,517,911		0.04	0.04	0.04	N/A	N/A	4.96	N/A	N/A	N/A									
Sep-06	3,402,928		0.05	0.05	0.05	N/A	N/A	6.70	N/A	N/A	N/A									
Oct-06	3,437,076		0.05	0.05	0.05	N/A	N/A	6.77	N/A	N/A	N/A									
Nov-06	2,970,873		0.05	0.05	0.05	N/A	N/A	5.85	N/A	N/A	N/A									
Dec-06	2,843,417	42,319,498	0.04	0.04	0.04	N/A	N/A	5.60	N/A	N/A	N/A									
Jan-07	3,279,208	41,156,107	0.05	0.05	0.05	N/A	N/A	6.46	N/A	N/A	N/A									
Feb-07	2,651,213	40,017,625	0.04	0.04	0.04	N/A	N/A	5.22	N/A	N/A	N/A									
Mar-07	3,150,451	39,269,860	0.05	0.05	0.05	N/A	N/A	6.20	N/A	N/A	N/A									
Apr-07	3,868,715	38,275,245	0.06	0.06	0.06	N/A	N/A	7.62	N/A	N/A	N/A									
May-07	3,018,562	37,456,338	0.05	0.05	0.05	N/A	N/A	5.94	N/A	N/A	N/A									
Jun-07	3,090,266	36,303,523	0.05	0.05	0.05	N/A	N/A	6.09	N/A	N/A	N/A									
Jul-07	3,884,596	38,115,216	0.06	0.06	0.06	N/A	N/A	7.65	N/A	N/A	N/A									
Aug-07	3,065,389	38,662,694	0.05	0.05	0.05	N/A	N/A	6.04	N/A	N/A	N/A									
Sep-07	3,013,653	38,273,419	0.05	0.05	0.05	N/A	N/A	5.93	N/A	N/A	N/A									
Oct-07	3,759,309	38,595,652	0.06	0.06	0.06	N/A	N/A	7.40	N/A	N/A	N/A									
Nov-07	2,818,837	38,443,616	0.04	0.04	0.04	N/A	N/A	5.55	N/A	N/A	N/A									
Dec-07	2,176,986	37,777,185	0.03	0.03	0.03	N/A	N/A	4.29	N/A	N/A	N/A	**0.62**	**0.62**	**0.62**	**0.00**	**0.00**	**78.86**	**0.00**	**0.00E+00**	**0**
Jan-08	2,459,618	36,957,595	0.04	0.04	0.04	N/A	N/A	4.84	N/A	N/A	N/A	0.61	0.61	0.61	0.00	0.00	76.91	0.00	0.00E+00	0
Feb-08	2,049,925	36,356,307	0.03	0.03	0.03	N/A	N/A	4.04	N/A	N/A	N/A	0.59	0.59	0.59	0.00	0.00	75.19	0.00	0.00E+00	0
Mar-08	3,787,420	36,993,276	0.06	0.06	0.06	N/A	N/A	7.46	N/A	N/A	N/A	0.59	0.59	0.59	0.00	0.00	75.08	0.00	0.00E+00	0
Apr-08	3,623,800	36,748,361	0.06	0.06	0.06	N/A	N/A	7.14	N/A	N/A	N/A	0.58	0.58	0.58	0.00	0.00	73.86	0.00	0.00E+00	0
May-08	2,943,086	36,672,885	0.05	0.05	0.05	N/A	N/A	5.80	N/A	N/A	N/A	0.57	0.57	0.57	0.00	0.00	72.98	0.00	0.00E+00	0
Jun-08	2,613,408	36,196,027	0.04	0.04	0.04	N/A	N/A	5.15	N/A	N/A	N/A	0.56	0.56	0.56	0.00	0.00	71.38	0.00	0.00E+00	0
Jul-08	3,605,707	35,917,138	0.06	0.06	0.06	N/A	N/A	7.10	N/A	N/A	N/A	0.57	0.57	0.57	0.00	0.00	72.89	0.00	0.00E+00	0
Aug-08	3,021,570	35,873,319	0.05	0.05	0.05	N/A	N/A	5.95	N/A	N/A	N/A	0.58	0.58	0.58	0.00	0.00	73.38	0.00	0.00E+00	0
Sep-08	2,819,951	35,679,617	0.04	0.04	0.04	N/A	N/A	5.55	N/A	N/A	N/A	0.57	0.57	0.57	0.00	0.00	72.81	0.00	0.00E+00	0
Oct-08	3,066,653	34,986,961	0.05	0.05	0.05	N/A	N/A	6.04	N/A	N/A	N/A	0.57	0.57	0.57	0.00	0.00	72.45	0.00	0.00E+00	0
Nov-08	2,559,186	34,727,310	0.04	0.04	0.04	N/A	N/A	5.04	N/A	N/A	N/A	0.57	0.57	0.57	0.00	0.00	72.04	0.00	0.00E+00	0
Dec-08	2,193,206	34,743,530	0.03	0.03	0.03	N/A	N/A	4.32	N/A	N/A	N/A	0.56	0.56	0.56	0.00	0.00	71.40	0.00	0.00E+00	0
Jan-09	2,629,684	34,913,596	0.04	0.04	0.04	N/A	N/A	5.18	N/A	N/A	N/A	0.56	0.56	0.56	0.00	0.00	70.76	0.00	0.00E+00	0
Feb-09	3,015,387	35,879,058	0.05	0.05	0.05	N/A	N/A	5.94	N/A	N/A	N/A	0.56	0.56	0.56	0.00	0.00	71.12	0.00	0.00E+00	0
Mar-09	2,818,859	34,910,497	0.04	0.04	0.04	N/A	N/A	5.55	N/A	N/A	N/A	0.56	0.56	0.56	0.00	0.00	70.79	0.00	0.00E+00	0
Apr-09	3,358,155	34,644,852	0.05	0.05	0.05	N/A	N/A	6.61	N/A	N/A	N/A	0.55	0.55	0.55	0.00	0.00	70.29	0.00	0.00E+00	0
May-09	2,234,954	33,936,720	0.03	0.03	0.03	N/A	N/A	4.40	N/A	N/A	N/A	0.55	0.55	0.55	0.00	0.00	69.52	0.00	0.00E+00	0
Jun-09	2,865,835	34,189,147	0.04	0.04	0.04	N/A	N/A	5.64	N/A	N/A	N/A	0.55	0.55	0.55	0.00	0.00	69.30	0.00	0.00E+00	0
Jul-09	3,708,306	34,291,746	0.06	0.06	0.06	N/A	N/A	7.30	N/A	N/A	N/A	0.54	0.54	0.54	0.00	0.00	69.12	0.00	0.00E+00	0
Aug-09	2,739,058	34,009,234	0.04	0.04	0.04	N/A	N/A	5.39	N/A	N/A	N/A	0.54	0.54	0.54	0.00	0.00	68.80	0.00	0.00E+00	0
Sep-09	2,865,062	34,054,345	0.04	0.04	0.04	N/A	N/A	5.64	N/A	N/A	N/A	0.54	0.54	0.54	0.00	0.00	68.66	0.00	0.00E+00	0
Oct-09	2,554,427	33,542,119	0.04	0.04	0.04	N/A	N/A	5.03	N/A	N/A	N/A	0.53	0.53	0.53	0.00	0.00	67.47	0.00	0.00E+00	0
Nov-09	2,008,544	32,991,477	0.03	0.03	0.03	N/A	N/A	3.96	N/A	N/A	N/A	0.52	0.52	0.52	0.00	0.00	66.67	0.00	0.00E+00	0
Dec-09	2,018,185	32,816,456	0.03	0.03	0.03	N/A	N/A	3.97	N/A	N/A	N/A	0.52	0.52	0.52	0.00	0.00	66.52	0.00	0.00E+00	0
Jan-10	2,849,457	33,036,229	0.04	0.04	0.04	N/A	N/A	5.61	N/A	N/A	N/A	0.53	0.53	0.53	0.00	0.00	66.90	0.00	0.00E+00	0
Feb-10	3,164,924	33,185,766	0.05	0.05	0.05	N/A	N/A	6.23	N/A	N/A	N/A	0.54	0.54	0.54	0.00	0.00	68.00	0.00	0.00E+00	0
Mar-10	2,549,702	32,916,609	0.04	0.04	0.04	N/A	N/A	5.02	N/A	N/A	N/A	0.53	0.53	0.53	0.00	0.00	66.78	0.00	0.00E+00	0
Apr-10	3,170,904	32,729,358	0.05	0.05	0.05	N/A	N/A	6.24	N/A	N/A	N/A	0.52	0.52	0.52	0.00	0.00	66.33	0.00	0.00E+00	0
May-10	2,400,146	32,894,550	0.04	0.04	0.04	N/A	N/A	4.73	N/A	N/A	N/A	0.52	0.52	0.52	0.00	0.00	65.80	0.00	0.00E+00	0
Jun-10	2,340,220	32,368,935	0.04	0.04	0.04	N/A	N/A	4.61	N/A	N/A	N/A	0.52	0.52	0.52	0.00	0.00	65.53	0.00	0.00E+00	0
Jul-10	2,653,844	31,314,473	0.04	0.04	0.04	N/A	N/A	5.23	N/A	N/A	N/A	0.51	0.51	0.51	0.00	0.00	64.59	0.00	0.00E+00	0
Aug-10	2,333,180	30,908,595	0.04	0.04	0.04	N/A	N/A	4.59	N/A	N/A	N/A	0.50	0.50	0.50	0.00	0.00	63.91	0.00	0.00E+00	0
Sep-10	2,652,793	30,696,326	0.04	0.04	0.04	N/A	N/A	5.22	N/A	N/A	N/A	0.50	0.50	0.50	0.00	0.00	63.75	0.00	0.00E+00	0
Oct-10	2,334,758	30,476,657	0.04	0.04	0.04	N/A	N/A	4.60	N/A	N/A	N/A	0.50	0.50	0.50	0.00	0.00	63.03	0.00	0.00E+00	0

Nov-10	1,965,260	30,433,373	0.03	0.03	0.03	N/A	N/A	3.87	N/A	N/A	N/A	0.49	0.49	0.49	0.00	0.00	62.44	0.00	0.00E+00	0
Dec-10	2,404,579	30,819,767	0.04	0.04	0.04	N/A	N/A	4.73	N/A	N/A	N/A	0.49	0.49	0.49	0.00	0.00	62.65	0.00	0.00E+00	0
Jan-11	2,532,546	30,502,856	0.04	0.04	0.04	N/A	N/A	4.99	N/A	N/A	N/A	0.49	0.49	0.49	0.00	0.00	62.56	0.00	0.00E+00	0
Feb-11	2,402,131	29,740,063	0.04	0.04	0.04	N/A	N/A	4.73	N/A	N/A	N/A	0.49	0.49	0.49	0.00	0.00	61.95	0.00	0.00E+00	0
Mar-11	3,149,197	30,339,558	0.05	0.05	0.05	N/A	N/A	6.20	N/A	N/A	N/A	0.49	0.49	0.49	0.00	0.00	62.28	0.00	0.00E+00	0
Apr-11	2,836,432	30,005,086	0.04	0.04	0.04	N/A	N/A	5.59	N/A	N/A	N/A	0.49	0.49	0.49	0.00	0.00	61.77	0.00	0.00E+00	0
May-11	2,773,132	30,378,072	0.04	0.04	0.04	N/A	N/A	5.46	N/A	N/A	N/A	0.49	0.49	0.49	0.00	0.00	62.30	0.00	0.00E+00	0
Jun-11	3,359,934	31,397,786	0.05	0.05	0.05	N/A	N/A	6.62	N/A	N/A	N/A	0.49	0.49	0.49	0.00	0.00	62.78	0.00	0.00E+00	0
Jul-11	1,976,732	30,720,674	0.03	0.03	0.03	N/A	N/A	3.89	N/A	N/A	N/A	0.48	0.48	0.48	0.00	0.00	61.08	0.00	0.00E+00	0
Aug-11	2,832,360	31,219,854	0.04	0.04	0.04	N/A	N/A	5.58	N/A	N/A	N/A	0.48	0.48	0.48	0.00	0.00	61.17	0.00	0.00E+00	0
Sep-11	3,475,674	32,042,735	0.05	0.05	0.05	N/A	N/A	6.84	N/A	N/A	N/A	0.49	0.49	0.49	0.00	0.00	61.77	0.00	0.00E+00	0
Oct-11	1,756,186	31,464,163	0.03	0.03	0.03	N/A	N/A	3.46	N/A	N/A	N/A	0.48	0.48	0.48	0.00	0.00	60.98	0.00	0.00E+00	0
Nov-11	2,021,405	31,520,308	0.03	0.03	0.03	N/A	N/A	3.98	N/A	N/A	N/A	0.48	0.48	0.48	0.00	0.00	61.00	0.00	0.00E+00	0
Dec-11	1,167,168	30,282,897	0.02	0.02	0.02	N/A	N/A	2.30	N/A	N/A	N/A	0.47	0.47	0.47	0.00	0.00	60.16	0.00	0.00E+00	0
Jan-12	2,408,991	30,159,342	0.04	0.04	0.04	N/A	N/A	4.74	N/A	N/A	N/A	0.47	0.47	0.47	0.00	0.00	59.72	0.00	0.00E+00	0
Feb-12	2,491,632	30,248,843	0.04	0.04	0.04	N/A	N/A	4.91	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	59.06	0.00	0.00E+00	0
Mar-12	2,867,001	29,966,647	0.04	0.04	0.04	N/A	N/A	5.65	N/A	N/A	N/A	0.47	0.47	0.47	0.00	0.00	59.37	0.00	0.00E+00	0
Apr-12	2,796,718	29,926,933	0.04	0.04	0.04	N/A	N/A	5.51	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	59.01	0.00	0.00E+00	0
May-12	3,172,933	30,326,734	0.05	0.05	0.05	N/A	N/A	6.25	N/A	N/A	N/A	0.47	0.47	0.47	0.00	0.00	59.77	0.00	0.00E+00	0
Jun-12	2,903,419	29,870,219	0.05	0.05	0.05	N/A	N/A	5.72	N/A	N/A	N/A	0.47	0.47	0.47	0.00	0.00	60.32	0.00	0.00E+00	0
Jul-12	2,271,777	30,165,264	0.04	0.04	0.04	N/A	N/A	4.47	N/A	N/A	N/A	0.47	0.47	0.47	0.00	0.00	59.95	0.00	0.00E+00	0
Aug-12	2,484,104	29,817,008	0.04	0.04	0.04	N/A	N/A	4.89	N/A	N/A	N/A	0.47	0.47	0.47	0.00	0.00	60.09	0.00	0.00E+00	0
Sep-12	1,192,242	27,533,576	0.02	0.02	0.02	N/A	N/A	2.35	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	58.66	0.00	0.00E+00	0
Oct-12	2,996,007	28,773,397	0.05	0.05	0.05	N/A	N/A	5.90	N/A	N/A	N/A	0.47	0.47	0.47	0.00	0.00	59.31	0.00	0.00E+00	0
Nov-12	2,616,631	29,368,623	0.04	0.04	0.04	N/A	N/A	5.15	N/A	N/A	N/A	0.47	0.47	0.47	0.00	0.00	59.95	0.00	0.00E+00	0
Dec-12	2,663,740	30,865,195	0.04	0.04	0.04	N/A	N/A	5.25	N/A	N/A	N/A	0.47	0.47	0.47	0.00	0.00	60.20	0.00	0.00E+00	0
Jan-13	2,843,844	31,300,048	0.04	0.04	0.04	N/A	N/A	5.60	N/A	N/A	N/A	0.48	0.48	0.48	0.00	0.00	60.51	0.00	0.00E+00	0
Feb-13	2,536,265	31,344,681	0.04	0.04	0.04	N/A	N/A	4.99	N/A	N/A	N/A	0.48	0.48	0.48	0.00	0.00	60.64	0.00	0.00E+00	0
Mar-13	2,486,552	30,964,232	0.04	0.04	0.04	N/A	N/A	4.90	N/A	N/A	N/A	0.47	0.47	0.47	0.00	0.00	59.99	0.00	0.00E+00	0
Apr-13	2,835,049	31,002,563	0.04	0.04	0.04	N/A	N/A	5.58	N/A	N/A	N/A	0.47	0.47	0.47	0.00	0.00	59.99	0.00	0.00E+00	0
May-13	3,000,517	30,830,147	0.05	0.05	0.05	N/A	N/A	5.91	N/A	N/A	N/A	0.47	0.47	0.47	0.00	0.00	60.21	0.00	0.00E+00	0
Jun-13	2,965,671	30,892,399	0.05	0.05	0.05	N/A	N/A	5.84	N/A	N/A	N/A	0.47	0.47	0.47	0.00	0.00	59.82	0.00	0.00E+00	0
Jul-13	2,496,330	31,116,952	0.04	0.04	0.04	N/A	N/A	4.92	N/A	N/A	N/A	0.47	0.47	0.47	0.00	0.00	60.34	0.00	0.00E+00	0
Aug-13	2,537,098	31,169,946	0.04	0.04	0.04	N/A	N/A	5.00	N/A	N/A	N/A	0.47	0.47	0.47	0.00	0.00	60.04	0.00	0.00E+00	0
Sep-13	2,786,009	32,763,713	0.04	0.04	0.04	N/A	N/A	5.49	N/A	N/A	N/A	0.47	0.47	0.47	0.00	0.00	59.37	0.00	0.00E+00	0
Oct-13	2,299,673	32,067,379	0.04	0.04	0.04	N/A	N/A	4.53	N/A	N/A	N/A	0.47	0.47	0.47	0.00	0.00	59.90	0.00	0.00E+00	0
Nov-13	2,819,270	32,270,018	0.04	0.04	0.04	N/A	N/A	5.55	N/A	N/A	N/A	0.48	0.48	0.48	0.00	0.00	60.69	0.00	0.00E+00	0
Dec-13	2,463,655	32,069,933	0.04	0.04	0.04	N/A	N/A	4.85	N/A	N/A	N/A	0.49	0.49	0.49	0.00	0.00	61.96	0.00	0.00E+00	0
Jan-14	3,027,673	32,253,762	0.05	0.05	0.05	N/A	N/A	5.96	N/A	N/A	N/A	0.49	0.49	0.49	0.00	0.00	62.57	0.00	0.00E+00	0
Feb-14	3,027,673	32,745,171	0.05	0.05	0.05	N/A	N/A	5.96	N/A	N/A	N/A	0.50	0.50	0.50	0.00	0.00	63.10	0.00	0.00E+00	0
Mar-14	1,769,502	32,028,121	0.03	0.03	0.03	N/A	N/A	3.48	N/A	N/A	N/A	0.49	0.49	0.49	0.00	0.00	62.02	0.00	0.00E+00	0
Apr-14	3,205,450	32,398,522	0.05	0.05	0.05	N/A	N/A	6.31	N/A	N/A	N/A	0.49	0.49	0.49	0.00	0.00	62.42	0.00	0.00E+00	0
May-14	3,400,280	32,798,285	0.05	0.05	0.05	N/A	N/A	6.70	N/A	N/A	N/A	0.49	0.49	0.49	0.00	0.00	62.65	0.00	0.00E+00	0
Jun-14	3,325,316	33,157,930	0.05	0.05	0.05	N/A	N/A	6.55	N/A	N/A	N/A	0.50	0.50	0.50	0.00	0.00	63.06	0.00	0.00E+00	0
Jul-14	3,354,838	34,016,438	0.05	0.05	0.05	N/A	N/A	6.61	N/A	N/A	N/A	0.50	0.50	0.50	0.00	0.00	64.13	0.00	0.00E+00	0
Aug-14	2,985,194	34,464,534	0.05	0.05	0.05	N/A	N/A	5.88	N/A	N/A	N/A	0.51	0.51	0.51	0.00	0.00	64.62	0.00	0.00E+00	0
Sep-14	2,941,612	34,620,137	0.05	0.05	0.05	N/A	N/A	5.79	N/A	N/A	N/A	0.52	0.52	0.52	0.00	0.00	66.34	0.00	0.00E+00	0
Oct-14	3,139,164	35,459,628	0.05	0.05	0.05	N/A	N/A	6.18	N/A	N/A	N/A	0.52	0.52	0.52	0.00	0.00	66.48	0.00	0.00E+00	0
Nov-14	2,987,972	35,628,330	0.05	0.05	0.05	N/A	N/A	5.88	N/A	N/A	N/A	0.53	0.53	0.53	0.00	0.00	66.85	0.00	0.00E+00	0
Dec-14	3,167,406	36,332,081	0.05	0.05	0.05	N/A	N/A	6.24	N/A	N/A	N/A	0.53	0.53	0.53	0.00	0.00	67.35	0.00	0.00E+00	0
Jan-15	2,927,506	36,231,913	0.05	0.05	0.05	N/A	N/A	5.76	N/A	N/A	N/A	0.53	0.53	0.53	0.00	0.00	67.43	0.00	0.00E+00	0
Feb-15	2,887,332	36,091,572	0.04	0.04	0.04	N/A	N/A	5.69	N/A	N/A	N/A	0.53	0.53	0.53	0.00	0.00	67.77	0.00	0.00E+00	0
Mar-15	3,102,778	37,424,848	0.05	0.05	0.05	N/A	N/A	6.11	N/A	N/A	N/A	0.54	0.54	0.54	0.00	0.00	68.38	0.00	0.00E+00	0
Apr-15	2,840,838	37,060,236	0.04	0.04	0.04	N/A	N/A	5.59	N/A	N/A	N/A	0.54	0.54	0.54	0.00	0.00	68.39	0.00	0.00E+00	0
May-15	3,041,012	36,700,968	0.05	0.05	0.05	N/A	N/A	5.99	N/A	N/A	N/A	0.54	0.54	0.54	0.00	0.00	68.43	0.00	0.00E+00	0
Jun-15	3,015,688	36,391,340	0.05	0.05	0.05	N/A	N/A	5.94	N/A	N/A	N/A	0.54	0.54	0.54	0.00	0.00	68.47	0.00	0.00E+00	0
Jul-15	3,280,159	36,316,661	0.05	0.05	0.05	N/A	N/A	6.46	N/A	N/A	N/A	0.55	0.55	0.55	0.00	0.00	69.25	0.00	0.00E+00	0
Aug-15	2,931,056	36,262,523	0.05	0.05	0.05	N/A	N/A	5.77	N/A	N/A	N/A	0.55	0.55	0.55	0.00	0.00	69.63	0.00	0.00E+00	0
Sep-15	2,807,430	36,128,341	0.04	0.04	0.04	N/A	N/A	5.53	N/A	N/A	N/A	0.55	0.55	0.55	0.00	0.00	69.66	0.00	0.00E+00	0
Oct-15	2,853,647	35,842,824	0.04	0.04	0.04	N/A	N/A	5.62	N/A	N/A	N/A	0.55	0.55	0.55	0.00	0.00	70.20	0.00	0.00E+00	0
Nov-15	2,711,223	35,566,075	0.04	0.04	0.04	N/A	N/A	5.34	N/A	N/A	N/A	0.55	0.55	0.55	0.00	0.00	70.09	0.00	0.00E+00	0
Dec-15	2,581,193	34,979,862	0.04	0.04	0.04	N/A	N/A	5.08	N/A	N/A	N/A	0.55	0.55	0.55	0.00	0.00	70.21	0.00	0.00E+00	0
Maximum	4,863,330	42,319,498	0.08	0.08	0.08	N/A	N/A	9.58	N/A	N/A	N/A	0.62	0.62	0.62	0.00	0.00	78.86	0.00	0.00E+00	0

Table B-8. Kiln 2 (Steam Heated Batch Kiln) Production and Emissions Summary

Date	Kiln 2 (Board Feet)		Kiln 2 Total Monthly Actual Emissions (tons) [1]									Kiln 2 Total 24-Month Rolling Average Actual Annual Emissions (tons)								
	Monthly	12-Month	PM	Total PM_{10}	Total $PM_{2.5}$	SO_2	NO_x	VOC	CO	Pb	CO_2e	PM	Total PM_{10}	Total $PM_{2.5}$	SO_2	NO_x	CO	VOC	Pb	CO_2e
Jan-06	3,803,964		0.06	0.06	0.06	N/A	N/A	7.49	N/A	N/A	N/A									
Feb-06	3,244,916		0.05	0.05	0.05	N/A	N/A	6.39	N/A	N/A	N/A									
Mar-06	3,337,837		0.05	0.05	0.05	N/A	N/A	6.57	N/A	N/A	N/A									
Apr-06	4,164,213		0.06	0.06	0.06	N/A	N/A	8.20	N/A	N/A	N/A									
May-06	3,285,822		0.05	0.05	0.05	N/A	N/A	6.47	N/A	N/A	N/A									
Jun-06	3,633,126		0.06	0.06	0.06	N/A	N/A	7.15	N/A	N/A	N/A									
Jul-06	2,606,294		0.04	0.04	0.04	N/A	N/A	5.13	N/A	N/A	N/A									
Aug-06	2,100,749		0.03	0.03	0.03	N/A	N/A	4.14	N/A	N/A	N/A									
Sep-06	3,222,769		0.05	0.05	0.05	N/A	N/A	6.35	N/A	N/A	N/A									
Oct-06	3,191,922		0.05	0.05	0.05	N/A	N/A	6.29	N/A	N/A	N/A									
Nov-06	3,019,057		0.05	0.05	0.05	N/A	N/A	5.94	N/A	N/A	N/A									
Dec-06	2,402,970	38,013,638	0.04	0.04	0.04	N/A	N/A	4.73	N/A	N/A	N/A									
Jan-07	2,990,499	37,200,173	0.05	0.05	0.05	N/A	N/A	5.89	N/A	N/A	N/A									
Feb-07	2,572,654	36,527,911	0.04	0.04	0.04	N/A	N/A	5.07	N/A	N/A	N/A									
Mar-07	3,138,404	36,328,479	0.05	0.05	0.05	N/A	N/A	6.18	N/A	N/A	N/A									
Apr-07	3,668,775	35,833,041	0.06	0.06	0.06	N/A	N/A	7.22	N/A	N/A	N/A									
May-07	2,827,745	35,374,964	0.04	0.04	0.04	N/A	N/A	5.57	N/A	N/A	N/A									
Jun-07	2,746,661	34,488,499	0.04	0.04	0.04	N/A	N/A	5.41	N/A	N/A	N/A									
Jul-07	3,391,373	35,273,578	0.05	0.05	0.05	N/A	N/A	6.68	N/A	N/A	N/A									
Aug-07	3,322,649	36,495,478	0.05	0.05	0.05	N/A	N/A	6.54	N/A	N/A	N/A									
Sep-07	3,159,661	36,432,370	0.05	0.05	0.05	N/A	N/A	6.22	N/A	N/A	N/A									
Oct-07	3,315,813	36,556,261	0.05	0.05	0.05	N/A	N/A	6.53	N/A	N/A	N/A									
Nov-07	3,018,666	36,555,870	0.05	0.05	0.05	N/A	N/A	5.94	N/A	N/A	N/A									
Dec-07	2,103,118	36,256,018	0.03	0.03	0.03	N/A	N/A	4.14	N/A	N/A	N/A	**0.58**	**0.58**	**0.58**	**0.00**	**0.00**	**73.12**	**0.00**	**0.00E+00**	**0**
Jan-08	2,266,477	35,531,996	0.04	0.04	0.04	N/A	N/A	4.46	N/A	N/A	N/A	0.56	0.56	0.56	0.00	0.00	71.61	0.00	0.00E+00	0
Feb-08	1,782,035	34,741,377	0.03	0.03	0.03	N/A	N/A	3.51	N/A	N/A	N/A	0.55	0.55	0.55	0.00	0.00	70.17	0.00	0.00E+00	0
Mar-08	3,264,903	34,867,876	0.05	0.05	0.05	N/A	N/A	6.43	N/A	N/A	N/A	0.55	0.55	0.55	0.00	0.00	70.10	0.00	0.00E+00	0
Apr-08	3,518,529	34,717,630	0.05	0.05	0.05	N/A	N/A	6.93	N/A	N/A	N/A	0.55	0.55	0.55	0.00	0.00	69.46	0.00	0.00E+00	0
May-08	2,872,669	34,762,554	0.04	0.04	0.04	N/A	N/A	5.66	N/A	N/A	N/A	0.54	0.54	0.54	0.00	0.00	69.05	0.00	0.00E+00	0
Jun-08	2,502,240	34,518,133	0.04	0.04	0.04	N/A	N/A	4.93	N/A	N/A	N/A	0.53	0.53	0.53	0.00	0.00	67.94	0.00	0.00E+00	0
Jul-08	3,359,624	34,486,384	0.05	0.05	0.05	N/A	N/A	6.62	N/A	N/A	N/A	0.54	0.54	0.54	0.00	0.00	68.68	0.00	0.00E+00	0
Aug-08	2,386,576	33,550,311	0.04	0.04	0.04	N/A	N/A	4.70	N/A	N/A	N/A	0.54	0.54	0.54	0.00	0.00	68.96	0.00	0.00E+00	0
Sep-08	2,748,105	33,138,755	0.04	0.04	0.04	N/A	N/A	5.41	N/A	N/A	N/A	0.54	0.54	0.54	0.00	0.00	68.50	0.00	0.00E+00	0
Oct-08	2,886,964	32,709,906	0.04	0.04	0.04	N/A	N/A	5.68	N/A	N/A	N/A	0.54	0.54	0.54	0.00	0.00	68.20	0.00	0.00E+00	0
Nov-08	2,490,005	32,181,245	0.04	0.04	0.04	N/A	N/A	4.90	N/A	N/A	N/A	0.53	0.53	0.53	0.00	0.00	67.68	0.00	0.00E+00	0
Dec-08	1,793,787	31,871,914	0.03	0.03	0.03	N/A	N/A	3.53	N/A	N/A	N/A	0.53	0.53	0.53	0.00	0.00	67.08	0.00	0.00E+00	0
Jan-09	3,188,975	32,794,412	0.05	0.05	0.05	N/A	N/A	6.28	N/A	N/A	N/A	0.53	0.53	0.53	0.00	0.00	67.27	0.00	0.00E+00	0
Feb-09	2,900,656	33,913,033	0.04	0.04	0.04	N/A	N/A	5.71	N/A	N/A	N/A	0.53	0.53	0.53	0.00	0.00	67.59	0.00	0.00E+00	0
Mar-09	2,616,508	33,264,638	0.04	0.04	0.04	N/A	N/A	5.15	N/A	N/A	N/A	0.53	0.53	0.53	0.00	0.00	67.08	0.00	0.00E+00	0
Apr-09	3,211,576	32,957,685	0.05	0.05	0.05	N/A	N/A	6.32	N/A	N/A	N/A	0.52	0.52	0.52	0.00	0.00	66.63	0.00	0.00E+00	0
May-09	1,977,081	32,062,097	0.03	0.03	0.03	N/A	N/A	3.89	N/A	N/A	N/A	0.52	0.52	0.52	0.00	0.00	65.79	0.00	0.00E+00	0
Jun-09	2,402,455	31,962,312	0.04	0.04	0.04	N/A	N/A	4.73	N/A	N/A	N/A	0.52	0.52	0.52	0.00	0.00	65.45	0.00	0.00E+00	0
Jul-09	2,832,321	31,435,009	0.04	0.04	0.04	N/A	N/A	5.58	N/A	N/A	N/A	0.51	0.51	0.51	0.00	0.00	64.90	0.00	0.00E+00	0
Aug-09	2,391,556	31,439,989	0.04	0.04	0.04	N/A	N/A	4.71	N/A	N/A	N/A	0.50	0.50	0.50	0.00	0.00	63.99	0.00	0.00E+00	0
Sep-09	2,306,263	30,998,147	0.04	0.04	0.04	N/A	N/A	4.54	N/A	N/A	N/A	0.50	0.50	0.50	0.00	0.00	63.15	0.00	0.00E+00	0
Oct-09	2,806,366	30,917,549	0.04	0.04	0.04	N/A	N/A	5.53	N/A	N/A	N/A	0.49	0.49	0.49	0.00	0.00	62.64	0.00	0.00E+00	0
Nov-09	1,914,564	30,342,108	0.03	0.03	0.03	N/A	N/A	3.77	N/A	N/A	N/A	0.48	0.48	0.48	0.00	0.00	61.56	0.00	0.00E+00	0
Dec-09	1,638,862	30,187,183	0.03	0.03	0.03	N/A	N/A	3.23	N/A	N/A	N/A	0.48	0.48	0.48	0.00	0.00	61.10	0.00	0.00E+00	0
Jan-10	2,790,644	29,788,852	0.04	0.04	0.04	N/A	N/A	5.50	N/A	N/A	N/A	0.49	0.49	0.49	0.00	0.00	61.62	0.00	0.00E+00	0
Feb-10	2,914,142	29,802,338	0.05	0.05	0.05	N/A	N/A	5.74	N/A	N/A	N/A	0.49	0.49	0.49	0.00	0.00	62.73	0.00	0.00E+00	0
Mar-10	2,423,076	29,608,906	0.04	0.04	0.04	N/A	N/A	4.77	N/A	N/A	N/A	0.49	0.49	0.49	0.00	0.00	61.90	0.00	0.00E+00	0
Apr-10	3,019,168	29,416,498	0.05	0.05	0.05	N/A	N/A	5.95	N/A	N/A	N/A	0.48	0.48	0.48	0.00	0.00	61.41	0.00	0.00E+00	0
May-10	2,184,138	29,623,555	0.03	0.03	0.03	N/A	N/A	4.30	N/A	N/A	N/A	0.48	0.48	0.48	0.00	0.00	60.73	0.00	0.00E+00	0
Jun-10	2,196,684	29,417,784	0.03	0.03	0.03	N/A	N/A	4.33	N/A	N/A	N/A	0.48	0.48	0.48	0.00	0.00	60.43	0.00	0.00E+00	0
Jul-10	2,419,546	29,005,009	0.04	0.04	0.04	N/A	N/A	4.76	N/A	N/A	N/A	0.47	0.47	0.47	0.00	0.00	59.51	0.00	0.00E+00	0
Aug-10	2,233,840	28,847,293	0.03	0.03	0.03	N/A	N/A	4.40	N/A	N/A	N/A	0.47	0.47	0.47	0.00	0.00	59.36	0.00	0.00E+00	0
Sep-10	2,368,585	28,909,615	0.04	0.04	0.04	N/A	N/A	4.66	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	58.98	0.00	0.00E+00	0
Oct-10	2,338,619	28,441,868	0.04	0.04	0.04	N/A	N/A	4.60	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	58.44	0.00	0.00E+00	0

Nov-10	2,136,878	28,664,182	0.03	0.03	0.03	N/A	N/A	4.21	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	58.09	0.00	0.00E+00	0
Dec-10	2,294,953	29,320,273	0.04	0.04	0.04	N/A	N/A	4.52	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	58.59	0.00	0.00E+00	0
Jan-11	2,270,494	28,800,123	0.04	0.04	0.04	N/A	N/A	4.47	N/A	N/A	N/A	0.45	0.45	0.45	0.00	0.00	57.68	0.00	0.00E+00	0
Feb-11	2,470,217	28,356,198	0.04	0.04	0.04	N/A	N/A	4.86	N/A	N/A	N/A	0.45	0.45	0.45	0.00	0.00	57.26	0.00	0.00E+00	0
Mar-11	2,793,308	28,726,430	0.04	0.04	0.04	N/A	N/A	5.50	N/A	N/A	N/A	0.45	0.45	0.45	0.00	0.00	57.43	0.00	0.00E+00	0
Apr-11	2,485,826	28,193,088	0.04	0.04	0.04	N/A	N/A	4.89	N/A	N/A	N/A	0.45	0.45	0.45	0.00	0.00	56.72	0.00	0.00E+00	0
May-11	2,611,436	28,620,386	0.04	0.04	0.04	N/A	N/A	5.14	N/A	N/A	N/A	0.45	0.45	0.45	0.00	0.00	57.34	0.00	0.00E+00	0
Jun-11	3,412,825	29,836,527	0.05	0.05	0.05	N/A	N/A	6.72	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	58.34	0.00	0.00E+00	0
Jul-11	2,233,937	29,650,918	0.03	0.03	0.03	N/A	N/A	4.40	N/A	N/A	N/A	0.45	0.45	0.45	0.00	0.00	57.75	0.00	0.00E+00	0
Aug-11	2,775,345	30,192,423	0.04	0.04	0.04	N/A	N/A	5.46	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	58.13	0.00	0.00E+00	0
Sep-11	3,332,247	31,156,085	0.05	0.05	0.05	N/A	N/A	6.56	N/A	N/A	N/A	0.47	0.47	0.47	0.00	0.00	59.14	0.00	0.00E+00	0
Oct-11	1,772,124	30,589,590	0.03	0.03	0.03	N/A	N/A	3.49	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	58.12	0.00	0.00E+00	0
Nov-11	1,900,778	30,353,490	0.03	0.03	0.03	N/A	N/A	3.74	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	58.11	0.00	0.00E+00	0
Dec-11	951,186	29,009,723	0.01	0.01	0.01	N/A	N/A	1.87	N/A	N/A	N/A	0.45	0.45	0.45	0.00	0.00	57.43	0.00	0.00E+00	0
Jan-12	2,541,390	29,280,619	0.04	0.04	0.04	N/A	N/A	5.00	N/A	N/A	N/A	0.45	0.45	0.45	0.00	0.00	57.18	0.00	0.00E+00	0
Feb-12	2,274,109	29,084,511	0.04	0.04	0.04	N/A	N/A	4.48	N/A	N/A	N/A	0.45	0.45	0.45	0.00	0.00	56.55	0.00	0.00E+00	0
Mar-12	2,803,534	29,094,737	0.04	0.04	0.04	N/A	N/A	5.52	N/A	N/A	N/A	0.45	0.45	0.45	0.00	0.00	56.93	0.00	0.00E+00	0
Apr-12	1,900,026	28,508,937	0.03	0.03	0.03	N/A	N/A	3.74	N/A	N/A	N/A	0.44	0.44	0.44	0.00	0.00	55.83	0.00	0.00E+00	0
May-12	3,107,505	29,005,006	0.05	0.05	0.05	N/A	N/A	6.12	N/A	N/A	N/A	0.45	0.45	0.45	0.00	0.00	56.74	0.00	0.00E+00	0
Jun-12	2,654,036	28,246,217	0.04	0.04	0.04	N/A	N/A	5.23	N/A	N/A	N/A	0.45	0.45	0.45	0.00	0.00	57.19	0.00	0.00E+00	0
Jul-12	2,212,424	28,224,704	0.03	0.03	0.03	N/A	N/A	4.36	N/A	N/A	N/A	0.45	0.45	0.45	0.00	0.00	56.98	0.00	0.00E+00	0
Aug-12	2,117,930	27,567,289	0.03	0.03	0.03	N/A	N/A	4.17	N/A	N/A	N/A	0.45	0.45	0.45	0.00	0.00	56.87	0.00	0.00E+00	0
Sep-12	1,094,394	25,329,436	0.02	0.02	0.02	N/A	N/A	2.15	N/A	N/A	N/A	0.44	0.44	0.44	0.00	0.00	55.61	0.00	0.00E+00	0
Oct-12	2,544,952	26,102,264	0.04	0.04	0.04	N/A	N/A	5.01	N/A	N/A	N/A	0.44	0.44	0.44	0.00	0.00	55.82	0.00	0.00E+00	0
Nov-12	2,300,157	26,501,643	0.04	0.04	0.04	N/A	N/A	4.53	N/A	N/A	N/A	0.44	0.44	0.44	0.00	0.00	55.98	0.00	0.00E+00	0
Dec-12	2,413,535	27,963,992	0.04	0.04	0.04	N/A	N/A	4.75	N/A	N/A	N/A	0.44	0.44	0.44	0.00	0.00	56.09	0.00	0.00E+00	0
Jan-13	2,465,186	27,887,788	0.04	0.04	0.04	N/A	N/A	4.85	N/A	N/A	N/A	0.44	0.44	0.44	0.00	0.00	56.29	0.00	0.00E+00	0
Feb-13	2,143,910	27,757,589	0.03	0.03	0.03	N/A	N/A	4.22	N/A	N/A	N/A	0.44	0.44	0.44	0.00	0.00	55.96	0.00	0.00E+00	0
Mar-13	2,310,175	27,264,230	0.04	0.04	0.04	N/A	N/A	4.55	N/A	N/A	N/A	0.44	0.44	0.44	0.00	0.00	55.49	0.00	0.00E+00	0
Apr-13	2,638,805	28,003,009	0.04	0.04	0.04	N/A	N/A	5.20	N/A	N/A	N/A	0.44	0.44	0.44	0.00	0.00	55.64	0.00	0.00E+00	0
May-13	2,793,396	27,688,900	0.04	0.04	0.04	N/A	N/A	5.50	N/A	N/A	N/A	0.44	0.44	0.44	0.00	0.00	55.82	0.00	0.00E+00	0
Jun-13	2,526,590	27,561,454	0.04	0.04	0.04	N/A	N/A	4.98	N/A	N/A	N/A	0.43	0.43	0.43	0.00	0.00	54.95	0.00	0.00E+00	0
Jul-13	2,357,710	27,706,740	0.04	0.04	0.04	N/A	N/A	4.64	N/A	N/A	N/A	0.43	0.43	0.43	0.00	0.00	55.07	0.00	0.00E+00	0
Aug-13	2,341,418	27,930,228	0.04	0.04	0.04	N/A	N/A	4.61	N/A	N/A	N/A	0.43	0.43	0.43	0.00	0.00	54.64	0.00	0.00E+00	0
Sep-13	2,477,547	29,313,381	0.04	0.04	0.04	N/A	N/A	4.88	N/A	N/A	N/A	0.42	0.42	0.42	0.00	0.00	53.80	0.00	0.00E+00	0
Oct-13	2,925,266	29,693,695	0.05	0.05	0.05	N/A	N/A	5.76	N/A	N/A	N/A	0.43	0.43	0.43	0.00	0.00	54.93	0.00	0.00E+00	0
Nov-13	2,667,507	30,061,045	0.04	0.04	0.04	N/A	N/A	5.25	N/A	N/A	N/A	0.44	0.44	0.44	0.00	0.00	55.69	0.00	0.00E+00	0
Dec-13	2,296,211	29,943,721	0.04	0.04	0.04	N/A	N/A	4.52	N/A	N/A	N/A	0.45	0.45	0.45	0.00	0.00	57.01	0.00	0.00E+00	0
Jan-14	2,764,031	30,242,566	0.04	0.04	0.04	N/A	N/A	5.44	N/A	N/A	N/A	0.45	0.45	0.45	0.00	0.00	57.23	0.00	0.00E+00	0
Feb-14	2,764,031	30,862,687	0.04	0.04	0.04	N/A	N/A	5.44	N/A	N/A	N/A	0.45	0.45	0.45	0.00	0.00	57.71	0.00	0.00E+00	0
Mar-14	1,429,076	29,981,588	0.02	0.02	0.02	N/A	N/A	2.81	N/A	N/A	N/A	0.44	0.44	0.44	0.00	0.00	56.36	0.00	0.00E+00	0
Apr-14	2,983,702	30,326,485	0.05	0.05	0.05	N/A	N/A	5.88	N/A	N/A	N/A	0.45	0.45	0.45	0.00	0.00	57.43	0.00	0.00E+00	0
May-14	3,088,042	30,621,131	0.05	0.05	0.05	N/A	N/A	6.08	N/A	N/A	N/A	0.45	0.45	0.45	0.00	0.00	57.41	0.00	0.00E+00	0
Jun-14	3,196,038	31,290,579	0.05	0.05	0.05	N/A	N/A	6.29	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	57.94	0.00	0.00E+00	0
Jul-14	3,316,716	32,249,585	0.05	0.05	0.05	N/A	N/A	6.53	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	59.03	0.00	0.00E+00	0
Aug-14	2,483,422	32,391,589	0.04	0.04	0.04	N/A	N/A	4.89	N/A	N/A	N/A	0.47	0.47	0.47	0.00	0.00	59.39	0.00	0.00E+00	0
Sep-14	2,699,244	32,613,286	0.04	0.04	0.04	N/A	N/A	5.32	N/A	N/A	N/A	0.48	0.48	0.48	0.00	0.00	60.97	0.00	0.00E+00	0
Oct-14	3,067,506	32,755,526	0.05	0.05	0.05	N/A	N/A	6.04	N/A	N/A	N/A	0.48	0.48	0.48	0.00	0.00	61.48	0.00	0.00E+00	0
Nov-14	2,565,644	32,653,663	0.04	0.04	0.04	N/A	N/A	5.05	N/A	N/A	N/A	0.49	0.49	0.49	0.00	0.00	61.75	0.00	0.00E+00	0
Dec-14	2,810,918	33,168,370	0.04	0.04	0.04	N/A	N/A	5.53	N/A	N/A	N/A	0.49	0.49	0.49	0.00	0.00	62.14	0.00	0.00E+00	0
Jan-15	2,668,988	33,073,327	0.04	0.04	0.04	N/A	N/A	5.26	N/A	N/A	N/A	0.49	0.49	0.49	0.00	0.00	62.34	0.00	0.00E+00	0
Feb-15	2,375,618	32,684,914	0.04	0.04	0.04	N/A	N/A	4.68	N/A	N/A	N/A	0.49	0.49	0.49	0.00	0.00	62.57	0.00	0.00E+00	0
Mar-15	2,808,064	34,063,902	0.04	0.04	0.04	N/A	N/A	5.53	N/A	N/A	N/A	0.50	0.50	0.50	0.00	0.00	63.06	0.00	0.00E+00	0
Apr-15	2,639,098	33,719,298	0.04	0.04	0.04	N/A	N/A	5.20	N/A	N/A	N/A	0.50	0.50	0.50	0.00	0.00	63.06	0.00	0.00E+00	0
May-15	2,386,791	33,018,047	0.04	0.04	0.04	N/A	N/A	4.70	N/A	N/A	N/A	0.49	0.49	0.49	0.00	0.00	62.66	0.00	0.00E+00	0
Jun-15	2,744,297	32,566,306	0.04	0.04	0.04	N/A	N/A	5.40	N/A	N/A	N/A	0.49	0.49	0.49	0.00	0.00	62.87	0.00	0.00E+00	0
Jul-15	3,120,877	32,370,467	0.05	0.05	0.05	N/A	N/A	6.15	N/A	N/A	N/A	0.50	0.50	0.50	0.00	0.00	63.62	0.00	0.00E+00	0
Aug-15	2,627,091	32,514,136	0.04	0.04	0.04	N/A	N/A	5.17	N/A	N/A	N/A	0.50	0.50	0.50	0.00	0.00	63.90	0.00	0.00E+00	0
Sep-15	2,675,552	32,490,444	0.04	0.04	0.04	N/A	N/A	5.27	N/A	N/A	N/A	0.50	0.50	0.50	0.00	0.00	64.10	0.00	0.00E+00	0
Oct-15	2,746,682	32,169,620	0.04	0.04	0.04	N/A	N/A	5.41	N/A	N/A	N/A	0.50	0.50	0.50	0.00	0.00	63.92	0.00	0.00E+00	0
Nov-15	2,516,321	32,120,297	0.04	0.04	0.04	N/A	N/A	4.95	N/A	N/A	N/A	0.50	0.50	0.50	0.00	0.00	63.77	0.00	0.00E+00	0
Dec-15	2,282,111	31,591,490	0.04	0.04	0.04	N/A	N/A	4.49	N/A	N/A	N/A	0.50	0.50	0.50	0.00	0.00	63.76	0.00	0.00E+00	0
Maximum	4,164,213	38,013,638	0.06	0.06	0.06	N/A	N/A	8.20	N/A	N/A	N/A	0.58	0.58	0.58	0.00	0.00	73.12	0.00	0.00E+00	0

Table B-9. Kiln 3 (Steam Heated Batch Kiln) Production and Emissions Summary

Date	Kiln 3 (Board Feet) Monthly	Kiln 3 (Board Feet) 12-Month	Kiln 3 Total Monthly Actual Emissions (tons) [1] PM	Total PM_{10}	Total $PM_{2.5}$	SO_2	NO_x	VOC	CO	Pb	CO_2e	Kiln 3 Total 24-Month Rolling Average Actual Annual Emissions (tons) PM	Total PM_{10}	Total $PM_{2.5}$	SO_2	NO_x	CO	VOC	Pb	CO_2e
Jan-06	4,088,465		0.06	0.06	0.06	N/A	N/A	8.05	N/A	N/A	N/A									
Feb-06	3,487,606		0.05	0.05	0.05	N/A	N/A	6.87	N/A	N/A	N/A									
Mar-06	3,587,476		0.06	0.06	0.06	N/A	N/A	7.06	N/A	N/A	N/A									
Apr-06	4,475,658		0.07	0.07	0.07	N/A	N/A	8.81	N/A	N/A	N/A									
May-06	3,531,571		0.05	0.05	0.05	N/A	N/A	6.95	N/A	N/A	N/A									
Jun-06	3,904,851		0.06	0.06	0.06	N/A	N/A	7.69	N/A	N/A	N/A									
Jul-06	2,197,150		0.03	0.03	0.03	N/A	N/A	4.33	N/A	N/A	N/A									
Aug-06	2,443,821		0.04	0.04	0.04	N/A	N/A	4.81	N/A	N/A	N/A									
Sep-06	3,283,419		0.05	0.05	0.05	N/A	N/A	6.47	N/A	N/A	N/A									
Oct-06	2,978,806		0.05	0.05	0.05	N/A	N/A	5.87	N/A	N/A	N/A									
Nov-06	2,704,780		0.04	0.04	0.04	N/A	N/A	5.33	N/A	N/A	N/A									
Dec-06	2,553,739	39,237,341	0.04	0.04	0.04	N/A	N/A	5.03	N/A	N/A	N/A									
Jan-07	2,926,085	38,074,961	0.05	0.05	0.05	N/A	N/A	5.76	N/A	N/A	N/A									
Feb-07	2,557,234	37,144,589	0.04	0.04	0.04	N/A	N/A	5.04	N/A	N/A	N/A									
Mar-07	3,135,144	36,692,257	0.05	0.05	0.05	N/A	N/A	6.17	N/A	N/A	N/A									
Apr-07	3,247,187	35,463,787	0.05	0.05	0.05	N/A	N/A	6.39	N/A	N/A	N/A									
May-07	2,944,446	34,876,662	0.05	0.05	0.05	N/A	N/A	5.80	N/A	N/A	N/A									
Jun-07	2,889,285	33,861,096	0.04	0.04	0.04	N/A	N/A	5.69	N/A	N/A	N/A									
Jul-07	3,285,381	34,949,327	0.05	0.05	0.05	N/A	N/A	6.47	N/A	N/A	N/A									
Aug-07	2,843,352	35,348,858	0.04	0.04	0.04	N/A	N/A	5.60	N/A	N/A	N/A									
Sep-07	2,912,697	34,978,136	0.05	0.05	0.05	N/A	N/A	5.74	N/A	N/A	N/A									
Oct-07	3,295,480	35,294,810	0.05	0.05	0.05	N/A	N/A	6.49	N/A	N/A	N/A									
Nov-07	2,403,469	34,993,499	0.04	0.04	0.04	N/A	N/A	4.73	N/A	N/A	N/A									
Dec-07	1,652,222	34,091,982	0.03	0.03	0.03	N/A	N/A	3.25	N/A	N/A	N/A	**0.57**	**0.57**	**0.57**	**0.00**	**0.00**	**72.20**	**0.00**	**0.00E+00**	**0**
Jan-08	2,185,044	33,350,941	0.03	0.03	0.03	N/A	N/A	4.30	N/A	N/A	N/A	0.55	0.55	0.55	0.00	0.00	70.32	0.00	0.00E+00	0
Feb-08	1,782,917	32,576,624	0.03	0.03	0.03	N/A	N/A	3.51	N/A	N/A	N/A	0.54	0.54	0.54	0.00	0.00	68.64	0.00	0.00E+00	0
Mar-08	3,276,397	32,717,877	0.05	0.05	0.05	N/A	N/A	6.45	N/A	N/A	N/A	0.54	0.54	0.54	0.00	0.00	68.34	0.00	0.00E+00	0
Apr-08	3,492,220	32,962,910	0.05	0.05	0.05	N/A	N/A	6.88	N/A	N/A	N/A	0.53	0.53	0.53	0.00	0.00	67.37	0.00	0.00E+00	0
May-08	2,667,707	32,686,171	0.04	0.04	0.04	N/A	N/A	5.25	N/A	N/A	N/A	0.52	0.52	0.52	0.00	0.00	66.52	0.00	0.00E+00	0
Jun-08	2,461,796	32,258,682	0.04	0.04	0.04	N/A	N/A	4.85	N/A	N/A	N/A	0.51	0.51	0.51	0.00	0.00	65.10	0.00	0.00E+00	0
Jul-08	3,375,847	32,349,148	0.05	0.05	0.05	N/A	N/A	6.65	N/A	N/A	N/A	0.52	0.52	0.52	0.00	0.00	66.26	0.00	0.00E+00	0
Aug-08	2,768,722	32,274,518	0.04	0.04	0.04	N/A	N/A	5.45	N/A	N/A	N/A	0.52	0.52	0.52	0.00	0.00	66.58	0.00	0.00E+00	0
Sep-08	2,699,769	32,061,590	0.04	0.04	0.04	N/A	N/A	5.32	N/A	N/A	N/A	0.52	0.52	0.52	0.00	0.00	66.00	0.00	0.00E+00	0
Oct-08	3,515,205	32,281,315	0.05	0.05	0.05	N/A	N/A	6.92	N/A	N/A	N/A	0.52	0.52	0.52	0.00	0.00	66.53	0.00	0.00E+00	0
Nov-08	2,105,860	31,983,706	0.03	0.03	0.03	N/A	N/A	4.15	N/A	N/A	N/A	0.52	0.52	0.52	0.00	0.00	65.94	0.00	0.00E+00	0
Dec-08	1,991,699	32,323,183	0.03	0.03	0.03	N/A	N/A	3.92	N/A	N/A	N/A	0.51	0.51	0.51	0.00	0.00	65.39	0.00	0.00E+00	0
Jan-09	2,779,223	32,917,362	0.04	0.04	0.04	N/A	N/A	5.47	N/A	N/A	N/A	0.51	0.51	0.51	0.00	0.00	65.24	0.00	0.00E+00	0
Feb-09	2,731,738	33,866,183	0.04	0.04	0.04	N/A	N/A	5.38	N/A	N/A	N/A	0.51	0.51	0.51	0.00	0.00	65.42	0.00	0.00E+00	0
Mar-09	2,589,661	33,179,447	0.04	0.04	0.04	N/A	N/A	5.10	N/A	N/A	N/A	0.51	0.51	0.51	0.00	0.00	64.88	0.00	0.00E+00	0
Apr-09	3,316,655	33,003,882	0.05	0.05	0.05	N/A	N/A	6.53	N/A	N/A	N/A	0.51	0.51	0.51	0.00	0.00	64.95	0.00	0.00E+00	0
May-09	1,880,233	32,216,408	0.03	0.03	0.03	N/A	N/A	3.70	N/A	N/A	N/A	0.50	0.50	0.50	0.00	0.00	63.90	0.00	0.00E+00	0
Jun-09	2,435,690	32,190,302	0.04	0.04	0.04	N/A	N/A	4.80	N/A	N/A	N/A	0.50	0.50	0.50	0.00	0.00	63.45	0.00	0.00E+00	0
Jul-09	4,190,204	33,004,659	0.06	0.06	0.06	N/A	N/A	8.25	N/A	N/A	N/A	0.51	0.51	0.51	0.00	0.00	64.34	0.00	0.00E+00	0
Aug-09	2,507,863	32,743,800	0.04	0.04	0.04	N/A	N/A	4.94	N/A	N/A	N/A	0.50	0.50	0.50	0.00	0.00	64.01	0.00	0.00E+00	0
Sep-09	2,549,975	32,594,006	0.04	0.04	0.04	N/A	N/A	5.02	N/A	N/A	N/A	0.50	0.50	0.50	0.00	0.00	63.66	0.00	0.00E+00	0
Oct-09	2,587,007	31,665,808	0.04	0.04	0.04	N/A	N/A	5.09	N/A	N/A	N/A	0.50	0.50	0.50	0.00	0.00	62.96	0.00	0.00E+00	0
Nov-09	1,772,027	31,331,975	0.03	0.03	0.03	N/A	N/A	3.49	N/A	N/A	N/A	0.49	0.49	0.49	0.00	0.00	62.34	0.00	0.00E+00	0
Dec-09	1,789,034	31,129,310	0.03	0.03	0.03	N/A	N/A	3.52	N/A	N/A	N/A	0.49	0.49	0.49	0.00	0.00	62.47	0.00	0.00E+00	0
Jan-10	2,732,726	31,082,813	0.04	0.04	0.04	N/A	N/A	5.38	N/A	N/A	N/A	0.50	0.50	0.50	0.00	0.00	63.01	0.00	0.00E+00	0
Feb-10	2,756,679	31,107,754	0.04	0.04	0.04	N/A	N/A	5.43	N/A	N/A	N/A	0.50	0.50	0.50	0.00	0.00	63.97	0.00	0.00E+00	0
Mar-10	2,503,804	31,021,897	0.04	0.04	0.04	N/A	N/A	4.93	N/A	N/A	N/A	0.50	0.50	0.50	0.00	0.00	63.21	0.00	0.00E+00	0
Apr-10	2,999,632	30,704,874	0.05	0.05	0.05	N/A	N/A	5.91	N/A	N/A	N/A	0.49	0.49	0.49	0.00	0.00	62.72	0.00	0.00E+00	0
May-10	2,096,360	30,921,001	0.03	0.03	0.03	N/A	N/A	4.13	N/A	N/A	N/A	0.49	0.49	0.49	0.00	0.00	62.16	0.00	0.00E+00	0
Jun-10	2,235,292	30,720,603	0.03	0.03	0.03	N/A	N/A	4.40	N/A	N/A	N/A	0.49	0.49	0.49	0.00	0.00	61.94	0.00	0.00E+00	0
Jul-10	2,465,488	28,995,887	0.04	0.04	0.04	N/A	N/A	4.85	N/A	N/A	N/A	0.48	0.48	0.48	0.00	0.00	61.04	0.00	0.00E+00	0
Aug-10	2,204,426	28,692,450	0.03	0.03	0.03	N/A	N/A	4.34	N/A	N/A	N/A	0.48	0.48	0.48	0.00	0.00	60.49	0.00	0.00E+00	0
Sep-10	2,427,197	28,569,672	0.04	0.04	0.04	N/A	N/A	4.78	N/A	N/A	N/A	0.47	0.47	0.47	0.00	0.00	60.22	0.00	0.00E+00	0
Oct-10	2,583,100	28,565,765	0.04	0.04	0.04	N/A	N/A	5.09	N/A	N/A	N/A	0.47	0.47	0.47	0.00	0.00	59.30	0.00	0.00E+00	0

Nov-10	2,035,945	28,829,683	0.03	0.03	0.03	N/A	N/A	4.01	N/A	N/A	N/A	0.47	0.47	0.47	0.00	0.00	59.23	0.00	0.00E+00	0
Dec-10	2,217,625	29,258,274	0.03	0.03	0.03	N/A	N/A	4.37	N/A	N/A	N/A	0.47	0.47	0.47	0.00	0.00	59.45	0.00	0.00E+00	0
Jan-11	2,365,812	28,891,360	0.04	0.04	0.04	N/A	N/A	4.66	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	59.05	0.00	0.00E+00	0
Feb-11	2,324,723	28,459,404	0.04	0.04	0.04	N/A	N/A	4.58	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	58.65	0.00	0.00E+00	0
Mar-11	2,661,336	28,616,936	0.04	0.04	0.04	N/A	N/A	5.24	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	58.72	0.00	0.00E+00	0
Apr-11	2,683,535	28,300,839	0.04	0.04	0.04	N/A	N/A	5.28	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	58.09	0.00	0.00E+00	0
May-11	2,863,501	29,067,980	0.04	0.04	0.04	N/A	N/A	5.64	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	59.06	0.00	0.00E+00	0
Jun-11	2,980,348	29,813,036	0.05	0.05	0.05	N/A	N/A	5.87	N/A	N/A	N/A	0.47	0.47	0.47	0.00	0.00	59.60	0.00	0.00E+00	0
Jul-11	2,094,052	29,441,600	0.03	0.03	0.03	N/A	N/A	4.12	N/A	N/A	N/A	0.45	0.45	0.45	0.00	0.00	57.53	0.00	0.00E+00	0
Aug-11	2,628,763	29,865,937	0.04	0.04	0.04	N/A	N/A	5.18	N/A	N/A	N/A	0.45	0.45	0.45	0.00	0.00	57.65	0.00	0.00E+00	0
Sep-11	3,392,375	30,831,115	0.05	0.05	0.05	N/A	N/A	6.68	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	58.48	0.00	0.00E+00	0
Oct-11	1,805,821	30,053,836	0.03	0.03	0.03	N/A	N/A	3.56	N/A	N/A	N/A	0.45	0.45	0.45	0.00	0.00	57.71	0.00	0.00E+00	0
Nov-11	1,989,538	30,007,429	0.03	0.03	0.03	N/A	N/A	3.92	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	57.93	0.00	0.00E+00	0
Dec-11	990,685	28,780,489	0.02	0.02	0.02	N/A	N/A	1.95	N/A	N/A	N/A	0.45	0.45	0.45	0.00	0.00	57.14	0.00	0.00E+00	0
Jan-12	2,549,532	28,964,209	0.04	0.04	0.04	N/A	N/A	5.02	N/A	N/A	N/A	0.45	0.45	0.45	0.00	0.00	56.96	0.00	0.00E+00	0
Feb-12	2,487,425	29,126,911	0.04	0.04	0.04	N/A	N/A	4.90	N/A	N/A	N/A	0.45	0.45	0.45	0.00	0.00	56.70	0.00	0.00E+00	0
Mar-12	3,046,437	29,512,012	0.05	0.05	0.05	N/A	N/A	6.00	N/A	N/A	N/A	0.45	0.45	0.45	0.00	0.00	57.23	0.00	0.00E+00	0
Apr-12	2,826,169	29,654,646	0.04	0.04	0.04	N/A	N/A	5.57	N/A	N/A	N/A	0.45	0.45	0.45	0.00	0.00	57.06	0.00	0.00E+00	0
May-12	3,019,574	29,810,719	0.05	0.05	0.05	N/A	N/A	5.95	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	57.97	0.00	0.00E+00	0
Jun-12	2,932,099	29,762,470	0.05	0.05	0.05	N/A	N/A	5.77	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	58.66	0.00	0.00E+00	0
Jul-12	2,455,028	30,123,446	0.04	0.04	0.04	N/A	N/A	4.83	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	58.64	0.00	0.00E+00	0
Aug-12	2,600,657	30,095,340	0.04	0.04	0.04	N/A	N/A	5.12	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	59.03	0.00	0.00E+00	0
Sep-12	1,155,513	27,858,478	0.02	0.02	0.02	N/A	N/A	2.28	N/A	N/A	N/A	0.45	0.45	0.45	0.00	0.00	57.78	0.00	0.00E+00	0
Oct-12	2,812,819	28,865,476	0.04	0.04	0.04	N/A	N/A	5.54	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	58.01	0.00	0.00E+00	0
Nov-12	2,602,877	29,478,815	0.04	0.04	0.04	N/A	N/A	5.13	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	58.57	0.00	0.00E+00	0
Dec-12	2,273,186	30,761,316	0.04	0.04	0.04	N/A	N/A	4.48	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	58.62	0.00	0.00E+00	0
Jan-13	2,664,715	30,876,499	0.04	0.04	0.04	N/A	N/A	5.25	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	58.92	0.00	0.00E+00	0
Feb-13	2,341,818	30,730,892	0.04	0.04	0.04	N/A	N/A	4.61	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	58.93	0.00	0.00E+00	0
Mar-13	2,273,223	29,957,678	0.04	0.04	0.04	N/A	N/A	4.48	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	58.55	0.00	0.00E+00	0
Apr-13	2,556,572	29,688,081	0.04	0.04	0.04	N/A	N/A	5.03	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	58.43	0.00	0.00E+00	0
May-13	2,892,935	29,561,442	0.04	0.04	0.04	N/A	N/A	5.70	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	58.45	0.00	0.00E+00	0
Jun-13	2,643,472	29,272,815	0.04	0.04	0.04	N/A	N/A	5.21	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	58.12	0.00	0.00E+00	0
Jul-13	2,565,816	29,383,603	0.04	0.04	0.04	N/A	N/A	5.05	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	58.59	0.00	0.00E+00	0
Aug-13	2,339,285	29,122,231	0.04	0.04	0.04	N/A	N/A	4.61	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	58.30	0.00	0.00E+00	0
Sep-13	2,627,582	30,594,300	0.04	0.04	0.04	N/A	N/A	5.17	N/A	N/A	N/A	0.45	0.45	0.45	0.00	0.00	57.55	0.00	0.00E+00	0
Oct-13	2,627,114	30,408,595	0.04	0.04	0.04	N/A	N/A	5.17	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	58.36	0.00	0.00E+00	0
Nov-13	2,665,111	30,470,829	0.04	0.04	0.04	N/A	N/A	5.25	N/A	N/A	N/A	0.46	0.46	0.46	0.00	0.00	59.02	0.00	0.00E+00	0
Dec-13	2,299,480	30,497,123	0.04	0.04	0.04	N/A	N/A	4.53	N/A	N/A	N/A	0.47	0.47	0.47	0.00	0.00	60.31	0.00	0.00E+00	0
Jan-14	2,895,908	30,728,316	0.04	0.04	0.04	N/A	N/A	5.70	N/A	N/A	N/A	0.48	0.48	0.48	0.00	0.00	60.65	0.00	0.00E+00	0
Feb-14	2,895,908	31,282,407	0.04	0.04	0.04	N/A	N/A	5.70	N/A	N/A	N/A	0.48	0.48	0.48	0.00	0.00	61.06	0.00	0.00E+00	0
Mar-14	1,595,944	30,605,128	0.02	0.02	0.02	N/A	N/A	3.14	N/A	N/A	N/A	0.47	0.47	0.47	0.00	0.00	59.63	0.00	0.00E+00	0
Apr-14	3,025,156	31,073,712	0.05	0.05	0.05	N/A	N/A	5.96	N/A	N/A	N/A	0.47	0.47	0.47	0.00	0.00	59.82	0.00	0.00E+00	0
May-14	3,300,610	31,481,387	0.05	0.05	0.05	N/A	N/A	6.50	N/A	N/A	N/A	0.47	0.47	0.47	0.00	0.00	60.10	0.00	0.00E+00	0
Jun-14	3,118,576	31,956,491	0.05	0.05	0.05	N/A	N/A	6.14	N/A	N/A	N/A	0.47	0.47	0.47	0.00	0.00	60.28	0.00	0.00E+00	0
Jul-14	3,265,334	32,656,009	0.05	0.05	0.05	N/A	N/A	6.43	N/A	N/A	N/A	0.48	0.48	0.48	0.00	0.00	61.08	0.00	0.00E+00	0
Aug-14	2,862,820	33,179,544	0.04	0.04	0.04	N/A	N/A	5.64	N/A	N/A	N/A	0.48	0.48	0.48	0.00	0.00	61.34	0.00	0.00E+00	0
Sep-14	2,635,382	33,187,344	0.04	0.04	0.04	N/A	N/A	5.19	N/A	N/A	N/A	0.49	0.49	0.49	0.00	0.00	62.80	0.00	0.00E+00	0
Oct-14	3,136,594	33,696,824	0.05	0.05	0.05	N/A	N/A	6.18	N/A	N/A	N/A	0.50	0.50	0.50	0.00	0.00	63.11	0.00	0.00E+00	0
Nov-14	2,904,534	33,936,247	0.05	0.05	0.05	N/A	N/A	5.72	N/A	N/A	N/A	0.50	0.50	0.50	0.00	0.00	63.41	0.00	0.00E+00	0
Dec-14	3,114,134	34,750,901	0.05	0.05	0.05	N/A	N/A	6.13	N/A	N/A	N/A	0.51	0.51	0.51	0.00	0.00	64.24	0.00	0.00E+00	0
Jan-15	2,763,684	34,618,676	0.04	0.04	0.04	N/A	N/A	5.44	N/A	N/A	N/A	0.51	0.51	0.51	0.00	0.00	64.34	0.00	0.00E+00	0
Feb-15	2,767,380	34,490,148	0.04	0.04	0.04	N/A	N/A	5.45	N/A	N/A	N/A	0.51	0.51	0.51	0.00	0.00	64.76	0.00	0.00E+00	0
Mar-15	3,086,986	35,981,190	0.05	0.05	0.05	N/A	N/A	6.08	N/A	N/A	N/A	0.52	0.52	0.52	0.00	0.00	65.56	0.00	0.00E+00	0
Apr-15	2,738,470	35,694,504	0.04	0.04	0.04	N/A	N/A	5.39	N/A	N/A	N/A	0.52	0.52	0.52	0.00	0.00	65.74	0.00	0.00E+00	0
May-15	3,022,063	35,415,957	0.05	0.05	0.05	N/A	N/A	5.95	N/A	N/A	N/A	0.52	0.52	0.52	0.00	0.00	65.86	0.00	0.00E+00	0
Jun-15	3,048,671	35,346,052	0.05	0.05	0.05	N/A	N/A	6.00	N/A	N/A	N/A	0.52	0.52	0.52	0.00	0.00	66.26	0.00	0.00E+00	0
Jul-15	3,188,045	35,268,763	0.05	0.05	0.05	N/A	N/A	6.28	N/A	N/A	N/A	0.53	0.53	0.53	0.00	0.00	66.88	0.00	0.00E+00	0
Aug-15	2,580,789	34,986,732	0.04	0.04	0.04	N/A	N/A	5.08	N/A	N/A	N/A	0.53	0.53	0.53	0.00	0.00	67.11	0.00	0.00E+00	0
Sep-15	2,697,650	35,049,000	0.04	0.04	0.04	N/A	N/A	5.31	N/A	N/A	N/A	0.53	0.53	0.53	0.00	0.00	67.18	0.00	0.00E+00	0
Oct-15	2,810,813	34,723,219	0.04	0.04	0.04	N/A	N/A	5.53	N/A	N/A	N/A	0.53	0.53	0.53	0.00	0.00	67.36	0.00	0.00E+00	0
Nov-15	2,555,279	34,373,964	0.04	0.04	0.04	N/A	N/A	5.03	N/A	N/A	N/A	0.53	0.53	0.53	0.00	0.00	67.25	0.00	0.00E+00	0
Dec-15	2,687,242	33,947,072	0.04	0.04	0.04	N/A	N/A	5.29	N/A	N/A	N/A	0.53	0.53	0.53	0.00	0.00	67.64	0.00	0.00E+00	0
Maximum	4,475,658	39,237,341	0.07	0.07	0.07	N/A	N/A	8.81	N/A	N/A	N/A	0.57	0.57	0.57	0.00	0.00	72.20	0.00	0.00E+00	0

Table B-10. Kiln 4 (Direct-Fired Batch Kiln) Production and Baseline Emissions Summary

Date	Kiln 4 (Board Feet)		Kiln 4 Total Monthly Actual Emissions (tons) [1,2]									Kiln 4 Total 24-Month Rolling Average Actual Annual Emissions (tons)								
	Monthly	12-Month	PM	Total PM_{10}	Total $PM_{2.5}$	SO_2	NO_x	VOC	CO	Pb	CO_2e	PM	Total PM_{10}	Total $PM_{2.5}$	SO_2	NO_x	CO	VOC	Pb	CO_2e
Jan-06	3,965,115		0.77	1.01	0.85	0.33	0.59	7.93	1.49	2.02E-04	2,777									
Feb-06	3,382,383		0.66	0.86	0.73	0.33	0.51	6.77	1.27	2.02E-04	2,777									
Mar-06	3,479,241		0.68	0.89	0.75	0.33	0.52	6.96	1.30	2.02E-04	2,777									
Apr-06	4,340,626		0.85	1.11	0.93	0.33	0.65	8.68	1.63	2.02E-04	2,777									
May-06	3,425,022		0.67	0.87	0.74	0.33	0.51	6.85	1.28	2.02E-04	2,777									
Jun-06	3,787,040		0.74	0.97	0.81	0.33	0.57	7.57	1.42	2.02E-04	2,777									
Jul-06	5,176,837		1.01	1.32	1.11	0.33	0.78	10.35	1.94	2.02E-04	2,777									
Aug-06	3,542,677		0.69	0.90	0.76	0.33	0.53	7.09	1.33	2.02E-04	2,777									
Sep-06	4,609,025		0.90	1.18	0.99	0.33	0.69	9.22	1.73	2.02E-04	2,777									
Oct-06	3,830,851		0.75	0.98	0.82	0.33	0.57	7.66	1.44	2.02E-04	2,777									
Nov-06	4,482,608		0.87	1.14	0.96	0.33	0.67	8.97	1.68	2.02E-04	2,777									
Dec-06	3,872,448	47,893,873	0.76	0.99	0.83	0.33	0.58	7.75	1.45	2.02E-04	2,777									
Jan-07	3,760,126	47,688,884	0.73	0.96	0.81	0.33	0.56	7.52	1.41	2.02E-04	2,777									
Feb-07	2,599,780	46,906,281	0.51	0.66	0.56	0.33	0.39	5.20	0.97	2.02E-04	2,777									
Mar-07	3,214,236	46,641,276	0.63	0.82	0.69	0.33	0.48	6.43	1.21	2.02E-04	2,777									
Apr-07	3,664,656	45,965,306	0.71	0.93	0.79	0.33	0.55	7.33	1.37	2.02E-04	2,777									
May-07	4,593,938	47,134,222	0.90	1.17	0.99	0.33	0.69	9.19	1.72	2.02E-04	2,777									
Jun-07	3,946,000	47,293,182	0.77	1.01	0.85	0.33	0.59	7.89	1.48	2.02E-04	2,777									
Jul-07	5,520,997	47,637,342	1.08	1.41	1.19	0.33	0.83	11.04	2.07	2.02E-04	2,777									
Aug-07	4,557,866	48,652,531	0.89	1.16	0.98	0.33	0.68	9.12	1.71	2.02E-04	2,777									
Sep-07	4,566,057	48,609,563	0.89	1.16	0.98	0.33	0.68	9.13	1.71	2.02E-04	2,777									
Oct-07	3,917,245	48,695,957	0.76	1.00	0.84	0.33	0.59	7.83	1.47	2.02E-04	2,777									
Nov-07	3,638,448	47,851,797	0.71	0.93	0.78	0.33	0.55	7.28	1.36	2.02E-04	2,777									
Dec-07	2,786,433	46,765,782	0.54	0.71	0.60	0.33	0.42	5.57	1.04	2.02E-04	2,777	9.23	12.07	10.18	3.94	7.10	94.66	17.75	2.43E-03	33,320
Jan-08	3,533,086	46,538,742	0.69	0.90	0.76	0.33	0.53	7.07	1.32	2.02E-04	2,777	9.19	12.01	10.13	3.94	7.07	94.23	17.67	2.43E-03	33,320
Feb-08	2,542,589	46,481,551	0.50	0.65	0.55	0.33	0.38	5.09	0.95	2.02E-04	2,777	9.11	11.91	10.04	3.94	7.00	93.39	17.51	2.43E-03	33,320
Mar-08	4,406,566	47,673,881	0.86	1.12	0.95	0.33	0.66	8.81	1.65	2.02E-04	2,777	9.20	12.03	10.14	3.94	7.07	94.32	17.68	2.43E-03	33,320
Apr-08	4,950,310	48,959,535	0.97	1.26	1.06	0.33	0.74	9.90	1.86	2.02E-04	2,777	**9.26**	**12.10**	**10.20**	**3.94**	**7.12**	**94.93**	**17.80**	**2.43E-03**	**33,320**
May-08	3,402,064	47,767,661	0.66	0.87	0.73	0.33	0.51	6.80	1.28	2.02E-04	2,777	9.25	12.10	10.20	3.94	7.12	94.91	17.79	2.43E-03	33,320
Jun-08	3,128,385	46,950,046	0.61	0.80	0.67	0.33	0.47	6.26	1.17	2.02E-04	2,777	9.19	12.02	10.13	3.94	7.07	94.25	17.67	2.43E-03	33,320
Jul-08	4,109,273	45,538,322	0.80	1.05	0.88	0.33	0.62	8.22	1.54	2.02E-04	2,777	9.08	11.88	10.02	3.94	6.99	93.18	17.47	2.43E-03	33,320
Aug-08	4,098,348	45,078,804	0.80	1.05	0.88	0.33	0.61	8.20	1.54	2.02E-04	2,777	9.14	11.95	10.08	3.94	7.03	93.74	17.57	2.43E-03	33,320
Sep-08	3,710,122	44,222,869	0.72	0.95	0.80	0.33	0.56	7.42	1.39	2.02E-04	2,777	9.05	11.84	9.98	3.94	6.96	92.84	17.41	2.43E-03	33,320
Oct-08	4,257,990	44,563,614	0.83	1.09	0.92	0.33	0.64	8.52	1.60	2.02E-04	2,777	9.09	11.89	10.03	3.94	6.99	93.26	17.49	2.43E-03	33,320
Nov-08	3,316,203	44,241,369	0.65	0.85	0.71	0.33	0.50	6.63	1.24	2.02E-04	2,777	8.98	11.74	9.90	3.94	6.91	92.10	17.27	2.43E-03	33,320
Dec-08	2,145,764	43,600,700	0.42	0.55	0.46	0.33	0.32	4.29	0.80	2.02E-04	2,777	8.81	11.52	9.71	3.94	6.78	90.37	16.94	2.43E-03	33,320
Jan-09	1,280,022	41,347,636	0.25	0.33	0.28	0.33	0.19	2.56	0.48	2.02E-04	2,777	8.57	11.21	9.45	3.94	6.59	87.89	16.48	2.43E-03	33,320
Feb-09	0	38,805,047	0.00	0.00	0.00	0.33	0.00	0.00	0.00	2.02E-04	2,777	8.32	10.87	9.17	3.94	6.40	85.29	15.99	2.43E-03	33,320
Mar-09	0	34,398,481	0.00	0.00	0.00	0.33	0.00	0.00	0.00	2.02E-04	2,777	8.00	10.46	8.82	3.94	6.16	82.08	15.39	2.43E-03	33,320
Apr-09	0	29,448,171	0.00	0.00	0.00	0.33	0.00	0.00	0.00	2.02E-04	2,777	7.64	10.00	8.43	3.94	5.88	78.41	14.70	2.43E-03	33,320
May-09	429,042	26,475,149	0.08	0.11	0.09	0.33	0.06	0.86	0.16	2.02E-04	2,777	7.24	9.47	7.98	3.94	5.57	74.25	13.92	2.43E-03	33,320
Jun-09	0	23,346,764	0.00	0.00	0.00	0.33	0.00	0.00	0.00	2.02E-04	2,777	6.85	8.96	7.56	3.94	5.27	70.30	13.18	2.43E-03	33,320
Jul-09	1,583,106	20,820,597	0.31	0.40	0.34	0.33	0.24	3.17	0.59	2.02E-04	2,777	6.47	8.46	7.13	3.94	4.98	66.36	12.44	2.43E-03	33,320
Aug-09	0	16,722,249	0.00	0.00	0.00	0.33	0.00	0.00	0.00	2.02E-04	2,777	6.03	7.88	6.64	3.94	4.64	61.80	11.59	2.43E-03	33,320
Sep-09	0	13,012,127	0.00	0.00	0.00	0.33	0.00	0.00	0.00	2.02E-04	2,777	5.58	7.30	6.15	3.94	4.29	57.24	10.73	2.43E-03	33,320
Oct-09	0	8,754,137	0.00	0.00	0.00	0.33	0.00	0.00	0.00	2.02E-04	2,777	5.20	6.80	5.73	3.94	4.00	53.32	10.00	2.43E-03	33,320
Nov-09	865,532	6,303,466	0.17	0.22	0.19	0.33	0.13	1.73	0.32	2.02E-04	2,777	4.93	6.44	5.43	3.94	3.79	50.55	9.48	2.43E-03	33,320
Dec-09	866,202	5,023,904	0.17	0.22	0.19	0.33	0.13	1.73	0.32	2.02E-04	2,777	4.74	6.20	5.23	3.94	3.65	48.63	9.12	2.43E-03	33,320
Jan-10	1,934,954	5,678,836	0.38	0.49	0.42	0.33	0.29	3.87	0.73	2.02E-04	2,777	4.59	6.00	5.06	3.94	3.53	47.03	8.82	2.43E-03	33,320
Feb-10	576,660	6,255,496	0.11	0.15	0.12	0.33	0.09	1.15	0.22	2.02E-04	2,777	4.39	5.75	4.84	3.94	3.38	45.06	8.45	2.43E-03	33,320
Mar-10	1,741,180	7,996,676	0.34	0.44	0.37	0.33	0.26	3.48	0.65	2.02E-04	2,777	4.13	5.41	4.56	3.94	3.18	42.40	7.95	2.43E-03	33,320
Apr-10	2,184,448	10,181,124	0.43	0.56	0.47	0.33	0.33	4.37	0.82	2.02E-04	2,777	3.86	5.05	4.26	3.94	2.97	39.63	7.43	2.43E-03	33,320
May-10	1,747,180	11,499,262	0.34	0.45	0.38	0.33	0.26	3.49	0.66	2.02E-04	2,777	3.70	4.84	4.08	3.94	2.85	37.98	7.12	2.43E-03	33,320
Jun-10	2,592,716	14,091,978	0.51	0.66	0.56	0.33	0.39	5.19	0.97	2.02E-04	2,777	3.65	4.77	4.02	3.94	2.81	37.44	7.02	2.43E-03	33,320
Jul-10	2,313,388	14,822,260	0.45	0.59	0.50	0.33	0.35	4.63	0.87	2.02E-04	2,777	3.48	4.54	3.83	3.94	2.67	35.64	6.68	2.43E-03	33,320
Aug-10	1,786,896	16,609,156	0.35	0.46	0.38	0.33	0.27	3.57	0.67	2.02E-04	2,777	3.25	4.25	3.58	3.94	2.50	33.33	6.25	2.43E-03	33,320
Sep-10	1,022,700	17,631,856	0.20	0.26	0.22	0.33	0.15	2.05	0.38	2.02E-04	2,777	2.99	3.91	3.29	3.94	2.30	30.65	5.75	2.43E-03	33,320
Oct-10	1,464,540	19,096,396	0.29	0.37	0.31	0.33	0.22	2.93	0.55	2.02E-04	2,777	2.72	3.55	2.99	3.94	2.09	27.85	5.22	2.43E-03	33,320

Nov-10	2,478,504	20,709,368	0.48	0.63	0.53	0.33	0.37	4.96	0.93	2.02E-04	2,777	2.63	3.44	2.90	3.94	2.03	27.01	5.06	2.43E-03	33,320
Dec-10	1,730,680	21,573,846	0.34	0.44	0.37	0.33	0.26	3.46	0.65	2.02E-04	2,777	2.59	3.39	2.86	3.94	1.99	26.60	4.99	2.43E-03	33,320
Jan-11	1,310,764	20,949,656	0.26	0.33	0.28	0.33	0.20	2.62	0.49	2.02E-04	2,777	2.60	3.40	2.86	3.94	2.00	26.63	4.99	2.43E-03	33,320
Feb-11	1,122,408	21,495,404	0.22	0.29	0.24	0.33	0.17	2.24	0.42	2.02E-04	2,777	2.71	3.54	2.98	3.94	2.08	27.75	5.20	2.43E-03	33,320
Mar-11	1,860,936	21,615,160	0.36	0.47	0.40	0.33	0.28	3.72	0.70	2.02E-04	2,777	2.89	3.78	3.18	3.94	2.22	29.61	5.55	2.43E-03	33,320
Apr-11	282,632	19,713,344	0.06	0.07	0.06	0.33	0.04	0.57	0.11	2.02E-04	2,777	2.91	3.81	3.21	3.94	2.24	29.90	5.61	2.43E-03	33,320
May-11	3,735,438	21,701,602	0.73	0.95	0.80	0.33	0.56	7.47	1.40	2.02E-04	2,777	3.24	4.23	3.57	3.94	2.49	33.20	6.23	2.43E-03	33,320
Jun-11	4,673,200	23,782,086	0.91	1.19	1.00	0.33	0.70	9.35	1.75	2.02E-04	2,777	3.69	4.83	4.07	3.94	2.84	37.88	7.10	2.43E-03	33,320
Jul-11	2,751,392	24,220,090	0.54	0.70	0.59	0.33	0.41	5.50	1.03	2.02E-04	2,777	3.81	4.98	4.20	3.94	2.93	39.04	7.32	2.43E-03	33,320
Aug-11	3,556,196	25,989,390	0.69	0.91	0.76	0.33	0.53	7.11	1.33	2.02E-04	2,777	4.15	5.43	4.58	3.94	3.19	42.60	7.99	2.43E-03	33,320
Sep-11	4,582,816	29,549,506	0.89	1.17	0.99	0.33	0.69	9.17	1.72	2.02E-04	2,777	4.60	6.02	5.07	3.94	3.54	47.18	8.85	2.43E-03	33,320
Oct-11	2,687,244	30,772,210	0.52	0.69	0.58	0.33	0.40	5.37	1.01	2.02E-04	2,777	4.86	6.36	5.36	3.94	3.74	49.87	9.35	2.43E-03	33,320
Nov-11	2,923,088	31,216,794	0.57	0.75	0.63	0.33	0.44	5.85	1.10	2.02E-04	2,777	5.06	6.62	5.58	3.94	3.89	51.93	9.74	2.43E-03	33,320
Dec-11	1,519,924	31,006,038	0.30	0.39	0.33	0.33	0.23	3.04	0.57	2.02E-04	2,777	5.13	6.70	5.65	3.94	3.94	52.58	9.86	2.43E-03	33,320
Jan-12	3,779,916	33,475,190	0.74	0.96	0.81	0.33	0.57	7.56	1.42	2.02E-04	2,777	5.31	6.94	5.85	3.94	4.08	54.43	10.20	2.43E-03	33,320
Feb-12	3,641,736	35,994,518	0.71	0.93	0.78	0.33	0.55	7.28	1.37	2.02E-04	2,777	5.61	7.33	6.18	3.94	4.31	57.49	10.78	2.43E-03	33,320
Mar-12	3,773,644	37,907,226	0.74	0.96	0.81	0.33	0.57	7.55	1.42	2.02E-04	2,777	5.80	7.59	6.40	3.94	4.46	59.53	11.16	2.43E-03	33,320
Apr-12	4,334,736	41,959,330	0.85	1.11	0.93	0.33	0.65	8.67	1.63	2.02E-04	2,777	6.01	7.86	6.63	3.94	4.63	61.68	11.56	2.43E-03	33,320
May-12	4,311,832	42,535,724	0.84	1.10	0.93	0.33	0.65	8.62	1.62	2.02E-04	2,777	6.26	8.19	6.91	3.94	4.82	64.24	12.04	2.43E-03	33,320
Jun-12	4,345,852	42,208,376	0.85	1.11	0.93	0.33	0.65	8.69	1.63	2.02E-04	2,777	6.43	8.41	7.09	3.94	4.95	65.99	12.37	2.43E-03	33,320
Jul-12	3,566,934	43,023,918	0.70	0.91	0.77	0.33	0.54	7.13	1.34	2.02E-04	2,777	6.56	8.57	7.23	3.94	5.04	67.25	12.61	2.43E-03	33,320
Aug-12	3,395,434	42,863,156	0.66	0.87	0.73	0.33	0.51	6.79	1.27	2.02E-04	2,777	6.71	8.78	7.40	3.94	5.16	68.86	12.91	2.43E-03	33,320
Sep-12	1,516,424	39,796,764	0.30	0.39	0.33	0.33	0.23	3.03	0.57	2.02E-04	2,777	6.76	8.84	7.45	3.94	5.20	69.35	13.00	2.43E-03	33,320
Oct-12	3,888,444	40,997,964	0.76	0.99	0.84	0.33	0.58	7.78	1.46	2.02E-04	2,777	7.00	9.15	7.72	3.94	5.38	71.77	13.46	2.43E-03	33,320
Nov-12	3,873,506	41,948,382	0.76	0.99	0.83	0.33	0.58	7.75	1.45	2.02E-04	2,777	7.13	9.33	7.87	3.94	5.49	73.17	13.72	2.43E-03	33,320
Dec-12	3,799,020	44,227,478	0.74	0.97	0.82	0.33	0.57	7.60	1.42	2.02E-04	2,777	7.34	9.59	8.09	3.94	5.64	75.24	14.11	2.43E-03	33,320
Jan-13	3,589,992	44,037,554	0.70	0.92	0.77	0.33	0.54	7.18	1.35	2.02E-04	2,777	7.56	9.88	8.33	3.94	5.81	77.52	14.53	2.43E-03	33,320
Feb-13	3,192,210	43,588,028	0.62	0.81	0.69	0.33	0.48	6.38	1.20	2.02E-04	2,777	7.76	10.15	8.56	3.94	5.97	79.59	14.92	2.43E-03	33,320
Mar-13	3,243,100	43,057,484	0.63	0.83	0.70	0.33	0.49	6.49	1.22	2.02E-04	2,777	7.89	10.32	8.70	3.94	6.07	80.97	15.18	2.43E-03	33,320
Apr-13	3,585,400	42,308,148	0.70	0.91	0.77	0.33	0.54	7.17	1.34	2.02E-04	2,777	8.22	10.74	9.06	3.94	6.32	84.27	15.80	2.43E-03	33,320
May-13	3,905,580	41,901,896	0.76	1.00	0.84	0.33	0.59	7.81	1.46	2.02E-04	2,777	8.23	10.77	9.08	3.94	6.33	84.44	15.83	2.43E-03	33,320
Jun-13	3,368,512	40,924,556	0.66	0.86	0.72	0.33	0.51	6.74	1.26	2.02E-04	2,777	8.11	10.60	8.94	3.94	6.23	83.14	15.59	2.43E-03	33,320
Jul-13	3,503,164	40,860,786	0.68	0.89	0.75	0.33	0.53	7.01	1.31	2.02E-04	2,777	8.18	10.70	9.02	3.94	6.29	83.89	15.73	2.43E-03	33,320
Aug-13	3,510,962	40,976,314	0.68	0.90	0.75	0.33	0.53	7.02	1.32	2.02E-04	2,777	8.17	10.69	9.01	3.94	6.29	83.84	15.72	2.43E-03	33,320
Sep-13	3,640,504	43,100,394	0.71	0.93	0.78	0.33	0.55	7.28	1.37	2.02E-04	2,777	8.08	10.57	8.91	3.94	6.22	82.90	15.54	2.43E-03	33,320
Oct-13	4,000,948	43,212,898	0.78	1.02	0.86	0.33	0.60	8.00	1.50	2.02E-04	2,777	8.21	10.74	9.05	3.94	6.32	84.22	15.79	2.43E-03	33,320
Nov-13	3,221,666	42,561,058	0.63	0.82	0.69	0.33	0.48	6.44	1.21	2.02E-04	2,777	8.24	10.77	9.08	3.94	6.34	84.51	15.85	2.43E-03	33,320
Dec-13	3,027,567	41,789,605	0.59	0.77	0.65	0.33	0.45	6.06	1.14	2.02E-04	2,777	8.39	10.97	9.25	3.94	6.45	86.02	16.13	2.43E-03	33,320
Jan-14	3,439,079	41,638,692	0.67	0.88	0.74	0.33	0.52	6.88	1.29	2.02E-04	2,777	8.35	10.92	9.21	3.94	6.43	85.68	16.06	2.43E-03	33,320
Feb-14	3,439,079	41,885,561	0.67	0.88	0.74	0.33	0.52	6.88	1.29	2.02E-04	2,777	8.33	10.90	9.19	3.94	6.41	85.48	16.03	2.43E-03	33,320
Mar-14	2,176,720	40,819,181	0.42	0.56	0.47	0.33	0.33	4.35	0.82	2.02E-04	2,777	8.18	10.69	9.02	3.94	6.29	83.88	15.73	2.43E-03	33,320
Apr-14	3,869,124	41,102,905	0.75	0.99	0.83	0.33	0.58	7.74	1.45	2.02E-04	2,777	8.13	10.63	8.97	3.94	6.26	83.42	15.64	2.43E-03	33,320
May-14	3,771,782	40,969,107	0.74	0.96	0.81	0.33	0.57	7.54	1.41	2.02E-04	2,777	8.08	10.57	8.91	3.94	6.22	82.88	15.54	2.43E-03	33,320
Jun-14	3,614,632	41,215,227	0.70	0.92	0.78	0.33	0.54	7.23	1.36	2.02E-04	2,777	8.01	10.47	8.83	3.94	6.16	82.14	15.40	2.43E-03	33,320
Jul-14	2,895,536	40,607,599	0.56	0.74	0.62	0.33	0.43	5.79	1.09	2.02E-04	2,777	7.94	10.39	8.76	3.94	6.11	81.47	15.28	2.43E-03	33,320
Aug-14	3,929,156	41,025,793	0.77	1.00	0.84	0.33	0.59	7.86	1.47	2.02E-04	2,777	8.00	10.46	8.82	3.94	6.15	82.01	15.38	2.43E-03	33,320
Sep-14	3,741,178	41,126,467	0.73	0.95	0.80	0.33	0.56	7.48	1.40	2.02E-04	2,777	8.21	10.74	9.05	3.94	6.32	84.23	15.79	2.43E-03	33,320
Oct-14	3,863,860	40,989,379	0.75	0.99	0.83	0.33	0.58	7.73	1.45	2.02E-04	2,777	8.21	10.74	9.05	3.94	6.32	84.21	15.79	2.43E-03	33,320
Nov-14	3,645,068	41,412,781	0.71	0.93	0.78	0.33	0.55	7.29	1.37	2.02E-04	2,777	8.19	10.71	9.03	3.94	6.30	83.98	15.75	2.43E-03	33,320
Dec-14	2,883,734	41,268,948	0.56	0.74	0.62	0.33	0.43	5.77	1.08	2.02E-04	2,777	8.10	10.59	8.93	3.94	6.23	83.06	15.57	2.43E-03	33,320
Jan-15	3,486,826	41,316,695	0.68	0.89	0.75	0.33	0.52	6.97	1.31	2.02E-04	2,777	8.09	10.58	8.92	3.94	6.22	82.96	15.55	2.43E-03	33,320
Feb-15	3,769,206	41,646,822	0.73	0.96	0.81	0.33	0.57	7.54	1.41	2.02E-04	2,777	8.14	10.65	8.98	3.94	6.26	83.54	15.66	2.43E-03	33,320
Mar-15	4,199,972	43,670,074	0.82	1.07	0.90	0.33	0.63	8.40	1.57	2.02E-04	2,777	8.24	10.77	9.08	3.94	6.34	84.49	15.84	2.43E-03	33,320
Apr-15	4,222,176	44,023,126	0.82	1.08	0.91	0.33	0.63	8.44	1.58	2.02E-04	2,777	8.30	10.85	9.15	3.94	6.38	85.13	15.96	2.43E-03	33,320
May-15	4,407,852	44,659,196	0.86	1.12	0.95	0.33	0.66	8.82	1.65	2.02E-04	2,777	8.35	10.92	9.21	3.94	6.42	85.63	16.06	2.43E-03	33,320
Jun-15	3,777,815	44,822,379	0.74	0.96	0.81	0.33	0.57	7.56	1.42	2.02E-04	2,777	8.39	10.97	9.25	3.94	6.45	86.04	16.13	2.43E-03	33,320
Jul-15	4,837,773	46,764,616	0.94	1.23	1.04	0.33	0.73	9.68	1.81	2.02E-04	2,777	8.52	11.14	9.39	3.94	6.55	87.38	16.38	2.43E-03	33,320
Aug-15	4,248,897	47,084,357	0.83	1.08	0.91	0.33	0.64	8.50	1.59	2.02E-04	2,777	8.59	11.23	9.47	3.94	6.61	88.11	16.52	2.43E-03	33,320
Sep-15	4,251,903	47,595,082	0.83	1.08	0.91	0.33	0.64	8.50	1.59	2.02E-04	2,777	8.65	11.31	9.54	3.94	6.65	88.73	16.64	2.43E-03	33,320
Oct-15	4,392,425	48,123,647	0.86	1.12	0.94	0.33	0.66	8.79	1.65	2.02E-04	2,777	8.69	11.36	9.58	3.94	6.68	89.12	16.71	2.43E-03	33,320
Nov-15	4,389,448	48,868,027	0.86	1.12	0.94	0.33	0.66	8.78	1.65	2.02E-04	2,777	8.80	11.51	9.71	3.94	6.77	90.29	16.93	2.43E-03	33,320
Dec-15	4,435,286	50,419,579	0.86	1.13	0.95	0.33	0.67	8.87	1.66	2.02E-04	2,777	8.94	11.69	9.86	3.94	6.88	91.69	17.19	2.43E-03	33,320
Maximum	5,520,997	50,419,579	1.08	1.41	1.19	0.33	0.83	11.04	2.07	2.02E-04	2,777	9.26	12.10	10.20	3.94	7.12	94.93	17.80	2.43E-03	33,320

1. Heat input capacity of burner 36 MMBtu/hr
2. Potential heat input capacity for burner divided by 12 for monthly potential emissions estimates for SO_2, lead, and CO_2.

Table B-11. Kiln 5 (Direct-Fired Batch Kiln) Production and Baseline Emissions Summary

	Kiln 5 (Board Feet)		Kiln 5 Total Monthly Actual Emissions (tons) [1]									Kiln 5 Total 24-Month Rolling Average Actual Annual Emissions (tons)								
Date	Monthly	12-Month	PM	Total PM_{10}	Total $PM_{2.5}$	SO_2	NO_x	VOC	CO	Pb	CO_2e	PM	Total PM_{10}	Total $PM_{2.5}$	SO_2	NO_x	CO	VOC	Pb	CO_2e
Jan-06	3,595,064		0.70	0.92	0.77	0.33	0.54	7.19	1.35	2.02E-04	2,777									
Feb-06	3,066,717		0.60	0.78	0.66	0.33	0.46	6.13	1.15	2.02E-04	2,777									
Mar-06	3,154,535		0.62	0.80	0.68	0.33	0.47	6.31	1.18	2.02E-04	2,777									
Apr-06	3,935,530		0.77	1.00	0.85	0.33	0.59	7.87	1.48	2.02E-04	2,777									
May-06	3,105,376		0.61	0.79	0.67	0.33	0.47	6.21	1.16	2.02E-04	2,777									
Jun-06	3,433,608		0.67	0.88	0.74	0.33	0.52	6.87	1.29	2.02E-04	2,777									
Jul-06	5,263,281		1.03	1.34	1.13	0.33	0.79	10.53	1.97	2.02E-04	2,777									
Aug-06	3,642,965		0.71	0.93	0.78	0.33	0.55	7.29	1.37	2.02E-04	2,777									
Sep-06	4,588,024		0.89	1.17	0.99	0.33	0.69	9.18	1.72	2.02E-04	2,777									
Oct-06	4,743,676		0.93	1.21	1.02	0.33	0.71	9.49	1.78	2.02E-04	2,777									
Nov-06	4,097,642		0.80	1.04	0.88	0.33	0.61	8.20	1.54	2.02E-04	2,777									
Dec-06	3,365,764	45,992,182	0.66	0.86	0.72	0.33	0.50	6.73	1.26	2.02E-04	2,777									
Jan-07	3,516,360	45,913,478	0.69	0.90	0.76	0.33	0.53	7.03	1.32	2.02E-04	2,777									
Feb-07	2,666,410	45,513,171	0.52	0.68	0.57	0.33	0.40	5.33	1.00	2.02E-04	2,777									
Mar-07	3,684,666	46,043,302	0.72	0.94	0.79	0.33	0.55	7.37	1.38	2.02E-04	2,777									
Apr-07	4,938,190	47,045,963	0.96	1.26	1.06	0.33	0.74	9.88	1.85	2.02E-04	2,777									
May-07	3,231,778	47,172,364	0.63	0.82	0.69	0.33	0.48	6.46	1.21	2.02E-04	2,777									
Jun-07	3,932,117	47,670,873	0.77	1.00	0.85	0.33	0.59	7.86	1.47	2.02E-04	2,777									
Jul-07	3,953,071	46,360,663	0.77	1.01	0.85	0.33	0.59	7.91	1.48	2.02E-04	2,777									
Aug-07	2,495,167	45,212,865	0.49	0.64	0.54	0.33	0.37	4.99	0.94	2.02E-04	2,777									
Sep-07	2,689,135	43,313,976	0.52	0.69	0.58	0.33	0.40	5.38	1.01	2.02E-04	2,777									
Oct-07	3,414,738	41,985,038	0.67	0.87	0.73	0.33	0.51	6.83	1.28	2.02E-04	2,777									
Nov-07	3,027,488	40,914,884	0.59	0.77	0.65	0.33	0.45	6.06	1.14	2.02E-04	2,777									
Dec-07	2,124,989	39,674,109	0.41	0.54	0.46	0.33	0.32	4.25	0.80	2.02E-04	2,777	8.35	10.92	9.21	3.94	6.42	85.67	16.06	2.43E-03	33,320
Jan-08	2,660,334	38,818,083	0.52	0.68	0.57	0.33	0.40	5.32	1.00	2.02E-04	2,777	8.26	10.80	9.11	3.94	6.35	84.74	15.89	2.43E-03	33,320
Feb-08	2,115,863	38,267,536	0.41	0.54	0.45	0.33	0.32	4.23	0.79	2.02E-04	2,777	8.17	10.68	9.01	3.94	6.28	83.78	15.71	2.43E-03	33,320
Mar-08	4,113,956	38,696,826	0.80	1.05	0.88	0.33	0.62	8.23	1.54	2.02E-04	2,777	8.26	10.80	9.11	3.94	6.36	84.74	15.89	2.43E-03	33,320
Apr-08	4,740,131	38,498,767	0.92	1.21	1.02	0.33	0.71	9.48	1.78	2.02E-04	2,777	8.34	10.91	9.20	3.94	6.42	85.55	16.04	2.43E-03	33,320
May-08	3,679,002	38,945,991	0.72	0.94	0.79	0.33	0.55	7.36	1.38	2.02E-04	2,777	**8.40**	**10.98**	**9.26**	**3.94**	**6.46**	**86.12**	**16.15**	**2.43E-03**	**33,320**
Jun-08	3,045,117	38,058,991	0.59	0.78	0.65	0.33	0.46	6.09	1.14	2.02E-04	2,777	8.36	10.93	9.22	3.94	6.43	85.73	16.07	2.43E-03	33,320
Jul-08	3,941,098	38,047,018	0.77	1.00	0.85	0.33	0.59	7.88	1.48	2.02E-04	2,777	8.23	10.76	9.07	3.94	6.33	84.41	15.83	2.43E-03	33,320
Aug-08	3,578,527	39,130,378	0.70	0.91	0.77	0.33	0.54	7.16	1.34	2.02E-04	2,777	8.22	10.75	9.07	3.94	6.33	84.35	15.81	2.43E-03	33,320
Sep-08	3,400,606	39,841,849	0.66	0.87	0.73	0.33	0.51	6.80	1.28	2.02E-04	2,777	8.11	10.60	8.94	3.94	6.24	83.16	15.59	2.43E-03	33,320
Oct-08	3,906,313	40,333,424	0.76	1.00	0.84	0.33	0.59	7.81	1.46	2.02E-04	2,777	8.03	10.50	8.85	3.94	6.17	82.32	15.43	2.43E-03	33,320
Nov-08	3,218,390	40,524,326	0.63	0.82	0.69	0.33	0.48	6.44	1.21	2.02E-04	2,777	7.94	10.38	8.75	3.94	6.11	81.44	15.27	2.43E-03	33,320
Dec-08	2,233,924	40,633,261	0.44	0.57	0.48	0.33	0.34	4.47	0.84	2.02E-04	2,777	7.83	10.24	8.63	3.94	6.02	80.31	15.06	2.43E-03	33,320
Jan-09	538,722	38,511,649	0.11	0.14	0.12	0.33	0.08	1.08	0.20	2.02E-04	2,777	7.54	9.86	8.31	3.94	5.80	77.33	14.50	2.43E-03	33,320
Feb-09	716,204	37,111,990	0.14	0.18	0.15	0.33	0.11	1.43	0.27	2.02E-04	2,777	7.35	9.61	8.10	3.94	5.65	75.38	14.13	2.43E-03	33,320
Mar-09	0	32,998,034	0.00	0.00	0.00	0.33	0.00	0.00	0.00	2.02E-04	2,777	6.99	9.14	7.71	3.94	5.38	71.70	13.44	2.43E-03	33,320
Apr-09	177,750	28,435,653	0.03	0.05	0.04	0.33	0.03	0.36	0.07	2.02E-04	2,777	6.53	8.53	7.20	3.94	5.02	66.94	12.55	2.43E-03	33,320
May-09	342,150	25,098,801	0.07	0.09	0.07	0.33	0.05	0.68	0.13	2.02E-04	2,777	6.24	8.17	6.88	3.94	4.80	64.05	12.01	2.43E-03	33,320
Jun-09	0	22,053,684	0.00	0.00	0.00	0.33	0.00	0.00	0.00	2.02E-04	2,777	5.86	7.66	6.46	3.94	4.51	60.12	11.27	2.43E-03	33,320
Jul-09	0	18,112,586	0.00	0.00	0.00	0.33	0.00	0.00	0.00	2.02E-04	2,777	5.48	7.16	6.04	3.94	4.21	56.16	10.53	2.43E-03	33,320
Aug-09	0	14,534,059	0.00	0.00	0.00	0.33	0.00	0.00	0.00	2.02E-04	2,777	5.23	6.84	5.77	3.94	4.02	53.67	10.06	2.43E-03	33,320
Sep-09	0	11,133,453	0.00	0.00	0.00	0.33	0.00	0.00	0.00	2.02E-04	2,777	4.97	6.50	5.48	3.94	3.82	50.98	9.56	2.43E-03	33,320
Oct-09	0	7,227,140	0.00	0.00	0.00	0.33	0.00	0.00	0.00	2.02E-04	2,777	4.64	6.06	5.11	3.94	3.57	47.56	8.92	2.43E-03	33,320
Nov-09	0	4,008,750	0.00	0.00	0.00	0.33	0.00	0.00	0.00	2.02E-04	2,777	4.34	5.68	4.79	3.94	3.34	44.54	8.35	2.43E-03	33,320
Dec-09	174,536	1,949,362	0.03	0.04	0.04	0.33	0.03	0.35	0.07	2.02E-04	2,777	4.15	5.43	4.58	3.94	3.19	42.58	7.98	2.43E-03	33,320
Jan-10	0	1,410,640	0.00	0.00	0.00	0.33	0.00	0.00	0.00	2.02E-04	2,777	3.89	5.09	4.29	3.94	2.99	39.92	7.49	2.43E-03	33,320
Feb-10	0	694,436	0.00	0.00	0.00	0.33	0.00	0.00	0.00	2.02E-04	2,777	3.69	4.82	4.06	3.94	2.84	37.81	7.09	2.43E-03	33,320
Mar-10	0	694,436	0.00	0.00	0.00	0.33	0.00	0.00	0.00	2.02E-04	2,777	3.29	4.30	3.62	3.94	2.53	33.69	6.32	2.43E-03	33,320
Apr-10	0	516,686	0.00	0.00	0.00	0.33	0.00	0.00	0.00	2.02E-04	2,777	2.82	3.69	3.11	3.94	2.17	28.95	5.43	2.43E-03	33,320
May-10	0	174,536	0.00	0.00	0.00	0.33	0.00	0.00	0.00	2.02E-04	2,777	2.46	3.22	2.72	3.94	1.90	25.27	4.74	2.43E-03	33,320
Jun-10	0	174,536	0.00	0.00	0.00	0.33	0.00	0.00	0.00	2.02E-04	2,777	2.17	2.83	2.39	3.94	1.67	22.23	4.17	2.43E-03	33,320
Jul-10	0	174,536	0.00	0.00	0.00	0.33	0.00	0.00	0.00	2.02E-04	2,777	1.78	2.33	1.97	3.94	1.37	18.29	3.43	2.43E-03	33,320

Aug-10	361,984	536,520	0.07	0.09	0.08	0.33	0.05	0.72	0.14	2.02E-04	2,777	1.47	1.92	1.62	3.94	1.13	15.07	2.83	2.43E-03	33,320
Sep-10	1,449,672	1,986,192	0.28	0.37	0.31	0.33	0.22	2.90	0.54	2.02E-04	2,777	1.28	1.67	1.41	3.94	0.98	13.12	2.46	2.43E-03	33,320
Oct-10	1,269,800	3,255,992	0.25	0.32	0.27	0.33	0.19	2.54	0.48	2.02E-04	2,777	1.02	1.34	1.13	3.94	0.79	10.48	1.97	2.43E-03	33,320
Nov-10	180,992	3,436,984	0.04	0.05	0.04	0.33	0.03	0.36	0.07	2.02E-04	2,777	0.73	0.95	0.80	3.94	0.56	7.45	1.40	2.43E-03	33,320
Dec-10	0	3,262,448	0.00	0.00	0.00	0.33	0.00	0.00	0.00	2.02E-04	2,777	0.51	0.66	0.56	3.94	0.39	5.21	0.98	2.43E-03	33,320
Jan-11	0	3,262,448	0.00	0.00	0.00	0.33	0.00	0.00	0.00	2.02E-04	2,777	0.46	0.60	0.50	3.94	0.35	4.67	0.88	2.43E-03	33,320
Feb-11	0	3,262,448	0.00	0.00	0.00	0.33	0.00	0.00	0.00	2.02E-04	2,777	0.39	0.50	0.43	3.94	0.30	3.96	0.74	2.43E-03	33,320
Mar-11	0	3,262,448	0.00	0.00	0.00	0.33	0.00	0.00	0.00	2.02E-04	2,777	0.39	0.50	0.43	3.94	0.30	3.96	0.74	2.43E-03	33,320
Apr-11	0	3,262,448	0.00	0.00	0.00	0.33	0.00	0.00	0.00	2.02E-04	2,777	0.37	0.48	0.41	3.94	0.28	3.78	0.71	2.43E-03	33,320
May-11	0	3,262,448	0.00	0.00	0.00	0.33	0.00	0.00	0.00	2.02E-04	2,777	0.34	0.44	0.37	3.94	0.26	3.44	0.64	2.43E-03	33,320
Jun-11	0	3,262,448	0.00	0.00	0.00	0.33	0.00	0.00	0.00	2.02E-04	2,777	0.34	0.44	0.37	3.94	0.26	3.44	0.64	2.43E-03	33,320
Jul-11	0	3,262,448	0.00	0.00	0.00	0.33	0.00	0.00	0.00	2.02E-04	2,777	0.34	0.44	0.37	3.94	0.26	3.44	0.64	2.43E-03	33,320
Aug-11	0	2,900,464	0.00	0.00	0.00	0.33	0.00	0.00	0.00	2.02E-04	2,777	0.34	0.44	0.37	3.94	0.26	3.44	0.64	2.43E-03	33,320
Sep-11	0	1,450,792	0.00	0.00	0.00	0.33	0.00	0.00	0.00	2.02E-04	2,777	0.34	0.44	0.37	3.94	0.26	3.44	0.64	2.43E-03	33,320
Oct-11	716,800	897,792	0.14	0.18	0.15	0.33	0.11	1.43	0.27	2.02E-04	2,777	0.40	0.53	0.45	3.94	0.31	4.15	0.78	2.43E-03	33,320
Nov-11	2,461,407	3,178,207	0.48	0.63	0.53	0.33	0.37	4.92	0.92	2.02E-04	2,777	0.64	0.84	0.71	3.94	0.50	6.62	1.24	2.43E-03	33,320
Dec-11	709,800	3,888,007	0.14	0.18	0.15	0.33	0.11	1.42	0.27	2.02E-04	2,777	0.70	0.91	0.77	3.94	0.54	7.15	1.34	2.43E-03	33,320
Jan-12	2,654,736	6,542,743	0.52	0.68	0.57	0.33	0.40	5.31	1.00	2.02E-04	2,777	0.96	1.25	1.05	3.94	0.74	9.81	1.84	2.43E-03	33,320
Feb-12	3,010,980	9,553,723	0.59	0.77	0.65	0.33	0.45	6.02	1.13	2.02E-04	2,777	1.25	1.63	1.38	3.94	0.96	12.82	2.40	2.43E-03	33,320
Mar-12	3,543,512	13,097,235	0.69	0.90	0.76	0.33	0.53	7.09	1.33	2.02E-04	2,777	1.60	2.09	1.76	3.94	1.23	16.36	3.07	2.43E-03	33,320
Apr-12	3,526,628	16,623,863	0.69	0.90	0.76	0.33	0.53	7.05	1.32	2.02E-04	2,777	1.94	2.54	2.14	3.94	1.49	19.89	3.73	2.43E-03	33,320
May-12	1,959,328	18,583,191	0.38	0.50	0.42	0.33	0.29	3.92	0.73	2.02E-04	2,777	2.13	2.79	2.35	3.94	1.64	21.85	4.10	2.43E-03	33,320
Jun-12	2,898,336	21,481,527	0.57	0.74	0.62	0.33	0.43	5.80	1.09	2.02E-04	2,777	2.41	3.15	2.66	3.94	1.86	24.75	4.64	2.43E-03	33,320
Jul-12	3,096,772	24,578,299	0.60	0.79	0.67	0.33	0.46	6.19	1.16	2.02E-04	2,777	2.71	3.55	2.99	3.94	2.09	27.84	5.22	2.43E-03	33,320
Aug-12	3,810,856	28,389,155	0.74	0.97	0.82	0.33	0.57	7.62	1.43	2.02E-04	2,777	3.05	3.99	3.36	3.94	2.35	31.29	5.87	2.43E-03	33,320
Sep-12	1,520,470	29,909,625	0.30	0.39	0.33	0.33	0.23	3.04	0.57	2.02E-04	2,777	3.06	4.00	3.37	3.94	2.35	31.36	5.88	2.43E-03	33,320
Oct-12	2,803,374	31,996,199	0.55	0.71	0.60	0.33	0.42	5.61	1.05	2.02E-04	2,777	3.21	4.19	3.54	3.94	2.47	32.90	6.17	2.43E-03	33,320
Nov-12	3,472,056	33,006,848	0.68	0.89	0.75	0.33	0.52	6.94	1.30	2.02E-04	2,777	3.53	4.61	3.89	3.94	2.71	36.19	6.78	2.43E-03	33,320
Dec-12	3,181,836	35,478,884	0.62	0.81	0.68	0.33	0.48	6.36	1.19	2.02E-04	2,777	3.84	5.02	4.23	3.94	2.95	39.37	7.38	2.43E-03	33,320
Jan-13	3,005,884	35,830,032	0.59	0.77	0.65	0.33	0.45	6.01	1.13	2.02E-04	2,777	4.13	5.40	4.56	3.94	3.18	42.37	7.94	2.43E-03	33,320
Feb-13	3,855,068	36,674,120	0.75	0.98	0.83	0.33	0.58	7.71	1.45	2.02E-04	2,777	4.51	5.89	4.97	3.94	3.47	46.23	8.67	2.43E-03	33,320
Mar-13	3,286,752	36,417,360	0.64	0.84	0.71	0.33	0.49	6.57	1.23	2.02E-04	2,777	4.83	6.31	5.32	3.94	3.71	49.52	9.28	2.43E-03	33,320
Apr-13	3,634,904	36,525,636	0.71	0.93	0.78	0.33	0.55	7.27	1.36	2.02E-04	2,777	5.18	6.78	5.71	3.94	3.99	53.15	9.97	2.43E-03	33,320
May-13	3,639,930	38,206,238	0.71	0.93	0.78	0.33	0.55	7.28	1.36	2.02E-04	2,777	5.54	7.24	6.10	3.94	4.26	56.79	10.65	2.43E-03	33,320
Jun-13	3,782,856	39,090,758	0.74	0.96	0.81	0.33	0.57	7.57	1.42	2.02E-04	2,777	5.91	7.72	6.51	3.94	4.54	60.58	11.36	2.43E-03	33,320
Jul-13	4,025,728	40,019,714	0.79	1.03	0.87	0.33	0.60	8.05	1.51	2.02E-04	2,777	6.30	8.24	6.94	3.94	4.84	64.60	12.11	2.43E-03	33,320
Aug-13	3,118,724	39,327,582	0.61	0.80	0.67	0.33	0.47	6.24	1.17	2.02E-04	2,777	6.60	8.63	7.28	3.94	5.08	67.72	12.70	2.43E-03	33,320
Sep-13	3,985,604	41,792,716	0.78	1.02	0.86	0.33	0.60	7.97	1.49	2.02E-04	2,777	6.99	9.14	7.71	3.94	5.38	71.71	13.44	2.43E-03	33,320
Oct-13	4,318,034	43,307,376	0.84	1.10	0.93	0.33	0.65	8.64	1.62	2.02E-04	2,777	7.34	9.60	8.10	3.94	5.65	75.31	14.12	2.43E-03	33,320
Nov-13	3,963,260	43,798,580	0.77	1.01	0.85	0.33	0.59	7.93	1.49	2.02E-04	2,777	7.49	9.79	8.26	3.94	5.76	76.81	14.40	2.43E-03	33,320
Dec-13	3,371,138	43,987,882	0.66	0.86	0.72	0.33	0.51	6.74	1.26	2.02E-04	2,777	7.75	10.13	8.54	3.94	5.96	79.47	14.90	2.43E-03	33,320
Jan-14	3,942,746	44,924,744	0.77	1.01	0.85	0.33	0.59	7.89	1.48	2.02E-04	2,777	7.87	10.30	8.68	3.94	6.06	80.76	15.14	2.43E-03	33,320
Feb-14	3,942,746	45,012,422	0.77	1.01	0.85	0.33	0.59	7.89	1.48	2.02E-04	2,777	7.96	10.42	8.78	3.94	6.13	81.69	15.32	2.43E-03	33,320
Mar-14	2,481,640	44,207,310	0.48	0.63	0.53	0.33	0.37	4.96	0.93	2.02E-04	2,777	7.86	10.28	8.67	3.94	6.05	80.63	15.12	2.43E-03	33,320
Apr-14	4,434,388	45,006,794	0.86	1.13	0.95	0.33	0.67	8.87	1.66	2.02E-04	2,777	7.95	10.40	8.76	3.94	6.11	81.54	15.29	2.43E-03	33,320
May-14	3,918,768	45,285,632	0.76	1.00	0.84	0.33	0.59	7.84	1.47	2.02E-04	2,777	8.14	10.65	8.98	3.94	6.26	83.50	15.65	2.43E-03	33,320
Jun-14	4,015,662	45,518,438	0.78	1.02	0.86	0.33	0.60	8.03	1.51	2.02E-04	2,777	8.25	10.79	9.10	3.94	6.35	84.61	15.86	2.43E-03	33,320
Jul-14	4,453,960	45,946,670	0.87	1.14	0.96	0.33	0.67	8.91	1.67	2.02E-04	2,777	8.38	10.96	9.24	3.94	6.45	85.97	16.12	2.43E-03	33,320
Aug-14	4,277,196	47,105,142	0.83	1.09	0.92	0.33	0.64	8.55	1.60	2.02E-04	2,777	8.43	11.02	9.29	3.94	6.48	86.44	16.21	2.43E-03	33,320
Sep-14	4,043,648	47,163,186	0.79	1.03	0.87	0.33	0.61	8.09	1.52	2.02E-04	2,777	8.67	11.34	9.56	3.94	6.67	88.96	16.68	2.43E-03	33,320
Oct-14	4,221,672	47,066,824	0.82	1.08	0.91	0.33	0.63	8.44	1.58	2.02E-04	2,777	8.81	11.52	9.72	3.94	6.78	90.38	16.95	2.43E-03	33,320
Nov-14	3,876,824	46,980,388	0.76	0.99	0.83	0.33	0.58	7.75	1.45	2.02E-04	2,777	8.85	11.57	9.76	3.94	6.81	90.78	17.02	2.43E-03	33,320
Dec-14	3,703,700	47,312,950	0.72	0.94	0.80	0.33	0.56	7.41	1.39	2.02E-04	2,777	8.90	11.64	9.81	3.94	6.85	91.31	17.12	2.43E-03	33,320
Jan-15	4,592,112	47,962,316	0.90	1.17	0.99	0.33	0.69	9.18	1.72	2.02E-04	2,777	9.06	11.84	9.99	3.94	6.97	92.89	17.42	2.43E-03	33,320
Feb-15	4,591,206	48,610,776	0.90	1.17	0.99	0.33	0.69	9.18	1.72	2.02E-04	2,777	9.13	11.94	10.06	3.94	7.02	93.63	17.55	2.43E-03	33,320
Mar-15	4,762,856	50,891,992	0.93	1.21	1.02	0.33	0.71	9.53	1.79	2.02E-04	2,777	9.27	12.13	10.22	3.94	7.13	95.10	17.83	2.43E-03	33,320
Apr-15	4,433,548	50,891,152	0.86	1.13	0.95	0.33	0.67	8.87	1.66	2.02E-04	2,777	9.35	12.23	10.31	3.94	7.19	95.90	17.98	2.43E-03	33,320
May-15	4,815,296	51,787,680	0.94	1.23	1.04	0.33	0.72	9.63	1.81	2.02E-04	2,777	9.46	12.38	10.44	3.94	7.28	97.08	18.20	2.43E-03	33,320
Jun-15	4,836,836	52,608,854	0.94	1.23	1.04	0.33	0.73	9.67	1.81	2.02E-04	2,777	9.57	12.51	10.55	3.94	7.36	98.13	18.40	2.43E-03	33,320
Jul-15	3,948,794	52,103,688	0.77	1.01	0.85	0.33	0.59	7.90	1.48	2.02E-04	2,777	9.56	12.50	10.54	3.94	7.35	98.06	18.38	2.43E-03	33,320
Aug-15	4,995,648	52,822,140	0.97	1.27	1.07	0.33	0.75	9.99	1.87	2.02E-04	2,777	9.74	12.74	10.74	3.94	7.49	99.93	18.74	2.43E-03	33,320
Sep-15	4,661,452	53,439,944	0.91	1.19	1.00	0.33	0.70	9.32	1.75	2.02E-04	2,777	9.81	12.83	10.81	3.94	7.55	100.61	18.86	2.43E-03	33,320
Oct-15	4,840,579	54,058,851	0.94	1.23	1.04	0.33	0.73	9.68	1.82	2.02E-04	2,777	9.86	12.89	10.87	3.94	7.58	101.13	18.96	2.43E-03	33,320
Nov-15	4,641,760	54,823,787	0.91	1.18	1.00	0.33	0.70	9.28	1.74	2.02E-04	2,777	9.93	12.98	10.94	3.94	7.64	101.81	19.09	2.43E-03	33,320
Dec-15	4,991,064	56,111,151	0.97	1.27	1.07	0.33	0.75	9.98	1.87	2.02E-04	2,777	10.08	13.19	11.12	3.94	7.76	103.43	19.39	2.43E-03	33,320
Maximum	**5,263,281**	**56,111,151**	**1.03**	**1.34**	**1.13**	**0.33**	**0.79**	**10.53**	**1.97**	**2.02E-04**	**2,777**	**10.08**	**13.19**	**11.12**	**3.94**	**7.76**	**103.43**	**19.39**	**2.43E-03**	**33,320**

1. Heat input capacity of burner 36 MMBtu/hr (past burner to be modified to 40 MMBtu/hr as part of project)

2. Potential heat input capacity for burner divided by 12 for monthly potential emissions estimates for SO_2, lead, and CO_2.

Table B-12. Modified Emission Units - Sum of Baseline Emissions

Date	Modified Emission Units: Kilns 3, 4 and 5 Baseline Emissions Total Monthly Actual Emissions (tons) [1]									Kilns 3, 4 and 5 Total 24-Month Rolling Average Actual Annual Emissions (tons)								
	PM	Total PM_{10}	Total $PM_{2.5}$	SO_2	NO_x	VOC	CO	Pb	CO_2e	PM	Total PM_{10}	Total $PM_{2.5}$	SO_2	NO_x	CO	VOC	Pb	CO_2e
Jan-06	1.54	1.99	1.69	0.66	1.13	23.17	2.84	4.05E-04	5,553									
Feb-06	1.31	1.70	1.44	0.66	0.97	19.77	2.42	4.05E-04	5,553									
Mar-06	1.35	1.75	1.48	0.66	1.00	20.33	2.49	4.05E-04	5,553									
Apr-06	1.68	2.18	1.85	0.66	1.24	25.37	3.10	4.05E-04	5,553									
May-06	1.33	1.72	1.46	0.66	0.98	20.02	2.45	4.05E-04	5,553									
Jun-06	1.47	1.90	1.61	0.66	1.08	22.13	2.71	4.05E-04	5,553									
Jul-06	2.07	2.70	2.28	0.66	1.57	25.21	3.92	4.05E-04	5,553									
Aug-06	1.44	1.87	1.58	0.66	1.08	19.18	2.69	4.05E-04	5,553									
Sep-06	1.84	2.40	2.03	0.66	1.38	24.86	3.45	4.05E-04	5,553									
Oct-06	1.72	2.23	1.89	0.66	1.29	23.02	3.22	4.05E-04	5,553									
Nov-06	1.72	2.23	1.89	0.66	1.29	22.49	3.22	4.05E-04	5,553									
Dec-06	1.45	1.89	1.60	0.66	1.09	19.51	2.71	4.05E-04	5,553									
Jan-07	1.46	1.90	1.61	0.66	1.09	20.32	2.73	4.05E-04	5,553									
Feb-07	1.07	1.38	1.17	0.66	0.79	15.57	1.97	4.05E-04	5,553									
Mar-07	1.39	1.81	1.53	0.66	1.03	19.97	2.59	4.05E-04	5,553									
Apr-07	1.73	2.24	1.90	0.66	1.29	23.60	3.23	4.05E-04	5,553									
May-07	1.57	2.04	1.73	0.66	1.17	21.45	2.93	4.05E-04	5,553									
Jun-07	1.58	2.05	1.74	0.66	1.18	21.45	2.95	4.05E-04	5,553									
Jul-07	1.90	2.47	2.09	0.66	1.42	25.42	3.55	4.05E-04	5,553									
Aug-07	1.42	1.84	1.56	0.66	1.06	19.71	2.64	4.05E-04	5,553									
Sep-07	1.46	1.90	1.61	0.66	1.09	20.25	2.72	4.05E-04	5,553									
Oct-07	1.48	1.92	1.63	0.66	1.10	21.15	2.75	4.05E-04	5,553									
Nov-07	1.34	1.74	1.47	0.66	1.00	18.07	2.50	4.05E-04	5,553									
Dec-07	0.98	1.28	1.08	0.66	0.74	13.08	1.84	4.05E-04	5,553	18.15	23.56	19.95	7.88	13.52	252.53	33.81	4.86E-03	66,641
Jan-08	1.24	1.61	1.37	0.66	0.93	16.69	2.32	4.05E-04	5,553	18.00	23.37	19.79	7.88	13.42	249.29	33.55	4.86E-03	66,641
Feb-08	0.94	1.22	1.03	0.66	0.70	12.83	1.75	4.05E-04	5,553	17.81	23.13	19.59	7.88	13.29	245.82	33.22	4.86E-03	66,641
Mar-08	1.71	2.22	1.88	0.66	1.28	23.49	3.20	4.05E-04	5,553	18.00	23.37	19.79	7.88	13.43	247.40	33.57	4.86E-03	66,641
Apr-08	1.94	2.53	2.14	0.66	1.45	26.26	3.63	4.05E-04	5,553	18.13	23.54	19.93	7.88	13.54	247.85	33.84	4.86E-03	66,641
May-08	1.42	1.85	1.56	0.66	1.06	19.42	2.66	4.05E-04	5,553	18.17	23.60	19.98	7.88	13.58	247.55	33.94	4.86E-03	66,641
Jun-08	1.24	1.61	1.37	0.66	0.93	17.20	2.32	4.05E-04	5,553	18.06	23.46	19.86	7.88	13.50	245.08	33.74	4.86E-03	66,641
Jul-08	1.62	2.11	1.78	0.66	1.21	22.75	3.02	4.05E-04	5,553	17.84	23.16	19.61	7.88	13.32	243.85	33.30	4.86E-03	66,641
Aug-08	1.54	2.00	1.69	0.66	1.15	20.81	2.88	4.05E-04	5,553	17.89	23.23	19.67	7.88	13.36	244.66	33.39	4.86E-03	66,641
Sep-08	1.43	1.86	1.57	0.66	1.07	19.54	2.67	4.05E-04	5,553	17.68	22.96	19.44	7.88	13.20	242.00	33.00	4.86E-03	66,641
Oct-08	1.65	2.14	1.81	0.66	1.22	23.25	3.06	4.05E-04	5,553	17.64	22.91	19.40	7.88	13.17	242.12	32.92	4.86E-03	66,641
Nov-08	1.31	1.70	1.44	0.66	0.98	17.22	2.45	4.05E-04	5,553	17.44	22.64	19.17	7.88	13.01	239.48	32.54	4.86E-03	66,641
Dec-08	0.88	1.15	0.97	0.66	0.66	12.68	1.64	4.05E-04	5,553	17.16	22.28	18.86	7.88	12.80	236.07	32.00	4.86E-03	66,641
Jan-09	0.40	0.51	0.43	0.66	0.27	9.11	0.68	4.05E-04	5,553	16.62	21.58	18.27	7.88	12.39	230.47	30.98	4.86E-03	66,641
Feb-09	0.18	0.22	0.20	0.66	0.11	6.81	0.27	4.05E-04	5,553	16.18	21.00	17.79	7.88	12.05	226.09	30.12	4.86E-03	66,641
Mar-09	0.04	0.04	0.04	0.66	0.00	5.10	0.00	4.05E-04	5,553	15.50	20.12	17.04	7.88	11.53	218.65	28.83	4.86E-03	66,641
Apr-09	0.09	0.10	0.09	0.66	0.03	6.89	0.07	4.05E-04	5,553	14.68	19.04	16.14	7.88	10.90	210.30	27.25	4.86E-03	66,641
May-09	0.18	0.23	0.19	0.66	0.12	5.24	0.29	4.05E-04	5,553	13.99	18.13	15.37	7.88	10.37	202.19	25.93	4.86E-03	66,641
Jun-09	0.04	0.04	0.04	0.66	0.00	4.80	0.00	4.05E-04	5,553	13.21	17.13	14.52	7.88	9.78	193.87	24.45	4.86E-03	66,641
Jul-09	0.37	0.47	0.41	0.66	0.24	11.42	0.59	4.05E-04	5,553	12.45	16.13	13.68	7.88	9.19	186.87	22.97	4.86E-03	66,641
Aug-09	0.04	0.04	0.04	0.66	0.00	4.94	0.00	4.05E-04	5,553	11.76	15.23	12.92	7.88	8.66	179.49	21.65	4.86E-03	66,641
Sep-09	0.04	0.04	0.04	0.66	0.00	5.02	0.00	4.05E-04	5,553	11.05	14.30	12.13	7.88	8.12	171.87	20.29	4.86E-03	66,641
Oct-09	0.04	0.04	0.04	0.66	0.00	5.09	0.00	4.05E-04	5,553	10.33	13.36	11.34	7.88	7.57	163.84	18.91	4.86E-03	66,641
Nov-09	0.20	0.25	0.21	0.66	0.13	5.22	0.32	4.05E-04	5,553	9.76	12.61	10.71	7.88	7.13	157.42	17.83	4.86E-03	66,641
Dec-09	0.23	0.29	0.25	0.66	0.16	5.60	0.39	4.05E-04	5,553	9.38	12.12	10.30	7.88	6.84	153.68	17.10	4.86E-03	66,641
Jan-10	0.42	0.54	0.46	0.66	0.29	9.25	0.73	4.05E-04	5,553	8.97	11.58	9.84	7.88	6.52	149.96	16.30	4.86E-03	66,641
Feb-10	0.16	0.19	0.17	0.66	0.09	6.58	0.22	4.05E-04	5,553	8.58	11.07	9.41	7.88	6.22	146.84	15.54	4.86E-03	66,641
Mar-10	0.38	0.48	0.41	0.66	0.26	8.41	0.65	4.05E-04	5,553	7.92	10.20	8.68	7.88	5.71	139.30	14.27	4.86E-03	66,641

Apr-10	0.47	0.60	0.52	0.66	0.33	10.28	0.82	4.05E-04	5,553	7.18	9.24	7.87	7.88	5.14	131.31	12.86	4.86E-03	66,641
May-10	0.37	0.48	0.41	0.66	0.26	7.62	0.66	4.05E-04	5,553	6.66	8.55	7.29	7.88	4.74	125.41	11.86	4.86E-03	66,641
Jun-10	0.54	0.70	0.59	0.66	0.39	9.59	0.97	4.05E-04	5,553	6.31	8.10	6.90	7.88	4.48	121.61	11.19	4.86E-03	66,641
Jul-10	0.49	0.63	0.54	0.66	0.35	9.48	0.87	4.05E-04	5,553	5.74	7.36	6.28	7.88	4.04	114.98	10.11	4.86E-03	66,641
Aug-10	0.45	0.58	0.50	0.66	0.32	8.64	0.81	4.05E-04	5,553	5.20	6.65	5.68	7.88	3.63	108.89	9.08	4.86E-03	66,641
Sep-10	0.52	0.67	0.57	0.66	0.37	9.72	0.93	4.05E-04	5,553	4.74	6.05	5.18	7.88	3.28	103.98	8.21	4.86E-03	66,641
Oct-10	0.57	0.74	0.63	0.66	0.41	10.56	1.03	4.05E-04	5,553	4.20	5.35	4.59	7.88	2.88	97.64	7.19	4.86E-03	66,641
Nov-10	0.55	0.71	0.60	0.66	0.40	9.33	1.00	4.05E-04	5,553	3.83	4.86	4.17	7.88	2.58	93.69	6.46	4.86E-03	66,641
Dec-10	0.37	0.48	0.41	0.66	0.26	7.83	0.65	4.05E-04	5,553	3.57	4.52	3.89	7.88	2.39	91.27	5.96	4.86E-03	66,641
Jan-11	0.29	0.37	0.32	0.66	0.20	7.28	0.49	4.05E-04	5,553	3.52	4.46	3.83	7.88	2.35	90.35	5.87	4.86E-03	66,641
Feb-11	0.25	0.32	0.28	0.66	0.17	6.82	0.42	4.05E-04	5,553	3.55	4.50	3.87	7.88	2.38	90.36	5.95	4.86E-03	66,641
Mar-11	0.40	0.52	0.44	0.66	0.28	8.96	0.70	4.05E-04	5,553	3.74	4.74	4.07	7.88	2.52	92.29	6.29	4.86E-03	66,641
Apr-11	0.10	0.11	0.10	0.66	0.04	5.85	0.11	4.05E-04	5,553	3.74	4.75	4.08	7.88	2.53	91.77	6.31	4.86E-03	66,641
May-11	0.77	1.00	0.85	0.66	0.56	13.11	1.40	4.05E-04	5,553	4.04	5.14	4.40	7.88	2.75	95.70	6.87	4.86E-03	66,641
Jun-11	0.96	1.24	1.05	0.66	0.70	15.22	1.75	4.05E-04	5,553	4.50	5.74	4.91	7.88	3.10	100.91	7.75	4.86E-03	66,641
Jul-11	0.57	0.73	0.62	0.66	0.41	9.63	1.03	4.05E-04	5,553	4.59	5.87	5.02	7.88	3.19	100.02	7.96	4.86E-03	66,641
Aug-11	0.73	0.95	0.81	0.66	0.53	12.29	1.33	4.05E-04	5,553	4.94	6.32	5.40	7.88	3.45	103.69	8.63	4.86E-03	66,641
Sep-11	0.95	1.22	1.04	0.66	0.69	15.85	1.72	4.05E-04	5,553	5.40	6.91	5.90	7.88	3.80	109.10	9.49	4.86E-03	66,641
Oct-11	0.69	0.90	0.76	0.66	0.51	10.36	1.28	4.05E-04	5,553	5.72	7.34	6.26	7.88	4.05	111.74	10.13	4.86E-03	66,641
Nov-11	1.08	1.40	1.19	0.66	0.81	14.69	2.02	4.05E-04	5,553	6.16	7.92	6.75	7.88	4.39	116.47	10.98	4.86E-03	66,641
Dec-11	0.45	0.58	0.49	0.66	0.33	6.41	0.84	4.05E-04	5,553	6.27	8.07	6.87	7.88	4.48	116.88	11.20	4.86E-03	66,641
Jan-12	1.29	1.68	1.42	0.66	0.97	17.89	2.41	4.05E-04	5,553	6.71	8.64	7.35	7.88	4.82	121.19	12.04	4.86E-03	66,641
Feb-12	1.34	1.73	1.47	0.66	1.00	18.20	2.49	4.05E-04	5,553	7.30	9.41	8.00	7.88	5.27	127.01	13.18	4.86E-03	66,641
Mar-12	1.47	1.91	1.62	0.66	1.10	20.63	2.74	4.05E-04	5,553	7.85	10.13	8.61	7.88	5.69	133.12	14.23	4.86E-03	66,641
Apr-12	1.58	2.05	1.73	0.66	1.18	21.29	2.95	4.05E-04	5,553	8.40	10.85	9.22	7.88	6.12	138.62	15.29	4.86E-03	66,641
May-12	1.27	1.65	1.40	0.66	0.94	18.49	2.35	4.05E-04	5,553	8.85	11.43	9.71	7.88	6.46	144.06	16.14	4.86E-03	66,641
Jun-12	1.46	1.89	1.60	0.66	1.09	20.26	2.72	4.05E-04	5,553	9.31	12.03	10.22	7.88	6.81	149.39	17.01	4.86E-03	66,641
Jul-12	1.34	1.74	1.47	0.66	1.00	18.16	2.50	4.05E-04	5,553	9.73	12.58	10.68	7.88	7.13	153.73	17.83	4.86E-03	66,641
Aug-12	1.45	1.88	1.59	0.66	1.08	19.53	2.70	4.05E-04	5,553	10.23	13.23	11.23	7.88	7.51	159.18	18.78	4.86E-03	66,641
Sep-12	0.61	0.79	0.67	0.66	0.46	8.35	1.14	4.05E-04	5,553	10.27	13.29	11.28	7.88	7.55	158.49	18.88	4.86E-03	66,641
Oct-12	1.35	1.75	1.48	0.66	1.00	18.92	2.51	4.05E-04	5,553	10.66	13.80	11.71	7.88	7.85	162.68	19.62	4.86E-03	66,641
Nov-12	1.47	1.91	1.62	0.66	1.10	19.82	2.75	4.05E-04	5,553	11.12	14.40	12.22	7.88	8.20	167.92	20.50	4.86E-03	66,641
Dec-12	1.40	1.82	1.54	0.66	1.05	18.44	2.62	4.05E-04	5,553	11.63	15.07	12.78	7.88	8.60	173.23	21.49	4.86E-03	66,641
Jan-13	1.33	1.72	1.46	0.66	0.99	18.44	2.47	4.05E-04	5,553	12.15	15.75	13.35	7.88	8.99	178.81	22.48	4.86E-03	66,641
Feb-13	1.41	1.83	1.55	0.66	1.06	18.71	2.64	4.05E-04	5,553	12.73	16.50	13.99	7.88	9.44	184.75	23.59	4.86E-03	66,641
Mar-13	1.31	1.70	1.44	0.66	0.98	17.54	2.45	4.05E-04	5,553	13.18	17.10	14.49	7.88	9.79	189.04	24.46	4.86E-03	66,641
Apr-13	1.45	1.88	1.59	0.66	1.08	19.48	2.71	4.05E-04	5,553	13.86	17.98	15.23	7.88	10.31	195.85	25.77	4.86E-03	66,641
May-13	1.52	1.97	1.67	0.66	1.13	20.79	2.83	4.05E-04	5,553	14.23	18.47	15.64	7.88	10.59	199.69	26.48	4.86E-03	66,641
Jun-13	1.44	1.86	1.58	0.66	1.07	19.51	2.68	4.05E-04	5,553	14.47	18.78	15.91	7.88	10.78	201.84	26.94	4.86E-03	66,641
Jul-13	1.51	1.96	1.66	0.66	1.13	20.11	2.82	4.05E-04	5,553	14.94	19.39	16.42	7.88	11.14	207.08	27.84	4.86E-03	66,641
Aug-13	1.33	1.73	1.46	0.66	0.99	17.87	2.49	4.05E-04	5,553	15.24	19.78	16.75	7.88	11.37	209.87	28.42	4.86E-03	66,641
Sep-13	1.53	1.99	1.68	0.66	1.14	20.43	2.86	4.05E-04	5,553	15.53	20.16	17.07	7.88	11.59	212.16	28.99	4.86E-03	66,641
Oct-13	1.66	2.16	1.83	0.66	1.25	21.81	3.12	4.05E-04	5,553	16.01	20.80	17.61	7.88	11.96	217.88	29.91	4.86E-03	66,641
Nov-13	1.44	1.87	1.59	0.66	1.08	19.62	2.69	4.05E-04	5,553	16.19	21.03	17.81	7.88	12.10	220.35	30.25	4.86E-03	66,641
Dec-13	1.28	1.67	1.41	0.66	0.96	17.33	2.40	4.05E-04	5,553	16.61	21.57	18.26	7.88	12.41	225.80	31.03	4.86E-03	66,641
Jan-14	1.48	1.93	1.63	0.66	1.11	20.47	2.77	4.05E-04	5,553	16.70	21.70	18.37	7.88	12.48	227.09	31.21	4.86E-03	66,641
Feb-14	1.48	1.93	1.63	0.66	1.11	20.47	2.77	4.05E-04	5,553	16.78	21.79	18.45	7.88	12.54	228.22	31.34	4.86E-03	66,641
Mar-14	0.93	1.21	1.03	0.66	0.70	12.46	1.75	4.05E-04	5,553	16.51	21.44	18.15	7.88	12.34	224.14	30.84	4.86E-03	66,641
Apr-14	1.67	2.16	1.83	0.66	1.25	22.56	3.11	4.05E-04	5,553	16.55	21.50	18.20	7.88	12.37	224.77	30.93	4.86E-03	66,641
May-14	1.55	2.01	1.70	0.66	1.15	21.88	2.88	4.05E-04	5,553	16.69	21.68	18.36	7.88	12.48	226.47	31.19	4.86E-03	66,641
Jun-14	1.54	1.99	1.69	0.66	1.14	21.40	2.86	4.05E-04	5,553	16.73	21.74	18.40	7.88	12.51	227.04	31.27	4.86E-03	66,641
Jul-14	1.48	1.92	1.63	0.66	1.10	21.13	2.76	4.05E-04	5,553	16.81	21.83	18.48	7.88	12.56	228.52	31.39	4.86E-03	66,641
Aug-14	1.64	2.14	1.81	0.66	1.23	22.05	3.08	4.05E-04	5,553	16.91	21.96	18.59	7.88	12.63	229.78	31.58	4.86E-03	66,641
Sep-14	1.56	2.03	1.71	0.66	1.17	20.76	2.92	4.05E-04	5,553	17.38	22.58	19.11	7.88	12.99	235.99	32.47	4.86E-03	66,641
Oct-14	1.63	2.11	1.79	0.66	1.21	22.35	3.03	4.05E-04	5,553	17.52	22.76	19.26	7.88	13.09	237.70	32.73	4.86E-03	66,641
Nov-14	1.51	1.96	1.66	0.66	1.13	20.76	2.82	4.05E-04	5,553	17.54	22.78	19.29	7.88	13.11	238.17	32.77	4.86E-03	66,641
Dec-14	1.33	1.73	1.46	0.66	0.99	19.31	2.47	4.05E-04	5,553	17.51	22.74	19.25	7.88	13.08	238.61	32.69	4.86E-03	66,641
Jan-15	1.62	2.10	1.78	0.66	1.21	21.60	3.03	4.05E-04	5,553	17.65	22.93	19.41	7.88	13.19	240.19	32.97	4.86E-03	66,641
Feb-15	1.67	2.17	1.84	0.66	1.25	22.17	3.14	4.05E-04	5,553	17.78	23.10	19.55	7.88	13.29	241.92	33.22	4.86E-03	66,641
Mar-15	1.80	2.33	1.97	0.66	1.34	24.01	3.36	4.05E-04	5,553	18.03	23.41	19.82	7.88	13.47	245.16	33.67	4.86E-03	66,641
Apr-15	1.73	2.25	1.90	0.66	1.30	22.70	3.25	4.05E-04	5,553	18.17	23.60	19.98	7.88	13.58	246.77	33.94	4.86E-03	66,641
May-15	1.85	2.40	2.03	0.66	1.38	24.40	3.46	4.05E-04	5,553	18.33	23.81	20.16	7.88	13.70	248.57	34.26	4.86E-03	66,641
Jun-15	1.73	2.24	1.90	0.66	1.29	23.23	3.23	4.05E-04	5,553	18.48	24.00	20.32	7.88	13.81	250.44	34.53	4.86E-03	66,641
Jul-15	1.76	2.29	1.94	0.66	1.32	23.85	3.29	4.05E-04	5,553	18.61	24.17	20.46	7.88	13.91	252.31	34.77	4.86E-03	66,641
Aug-15	1.84	2.40	2.03	0.66	1.39	23.57	3.47	4.05E-04	5,553	18.86	24.50	20.74	7.88	14.10	255.16	35.26	4.86E-03	66,641
Sep-15	1.78	2.31	1.96	0.66	1.34	23.14	3.34	4.05E-04	5,553	18.99	24.67	20.88	7.88	14.20	256.52	35.50	4.86E-03	66,641
Oct-15	1.84	2.40	2.03	0.66	1.38	24.00	3.46	4.05E-04	5,553	19.08	24.79	20.98	7.88	14.27	257.61	35.67	4.86E-03	66,641
Nov-15	1.80	2.34	1.98	0.66	1.35	23.09	3.39	4.05E-04	5,553	19.26	25.02	21.18	7.88	14.41	259.35	36.02	4.86E-03	66,641
Dec-15	1.88	2.45	2.07	0.66	1.41	24.15	3.53	4.05E-04	5,553	**19.56**	**25.41**	**21.51**	**7.88**	**14.63**	**262.76**	**36.58**	**4.86E-03**	**66,641**
Maximum	2.07	2.70	2.28	0.66	1.57	26.26	3.92	4.05E-04	5,553	19.56	25.41	21.51	7.88	14.63	262.76	36.58	4.86E-03	66,641

Table B-13. Summary of Selected Baseline Periods and Emissions

Pollutant	Total Emissions for Kilns 3-5		
	Baseline Period		Baseline Emissions
	Start Month	End Month	(tpy)
PM	Jan-14	Dec-15	19.56
Total PM_{10}	Jan-14	Dec-15	25.41
Total $PM_{2.5}$	Jan-14	Dec-15	21.51
SO_2	Jan-14	Dec-15	7.88
NO_X	Jan-14	Dec-15	14.63
Total VOC	Jan-14	Dec-15	262.76
CO	Jan-14	Dec-15	36.58
TRS, H_2S, H_2SO_4, Fluoride	-	-	N/A
Lead	Jan-14	Dec-15	4.86E-03
CO_2e	Jan-14	Dec-15	66,641

Table B-14. Project Removed Emission Units - Sum of Baseline Emissions (Contemporaneous Emission Decreases)

Date	Removed Emission Units: Boilers 1 and 2, Kilns 1 and 2 Baseline Emissions Total Monthly Actual Emissions (tons) [1]									Boilers 1 and 2, Kilns 1 and 2 Total 24-Month Rolling Average Actual Annual Emissions (tons)								
	PM	Total PM_{10}	Total $PM_{2.5}$	SO_2	NO_x	VOC	CO	Pb	CO_2e	PM	Total PM_{10}	Total $PM_{2.5}$	SO_2	NO_x	CO	VOC	Pb	CO_2e
Jan-06	4.22	4.20	2.68	0.08	5.35	16.31	13.24	4.06E-04	5,573									
Feb-06	3.87	3.85	2.46	0.07	4.93	13.91	12.18	3.74E-04	5,129									
Mar-06	4.56	4.54	2.90	0.09	5.83	14.32	14.42	4.42E-04	6,069									
Apr-06	4.38	4.36	2.79	0.08	5.55	17.85	13.73	4.21E-04	5,780									
May-06	3.83	3.81	2.44	0.07	4.87	14.09	12.05	3.70E-04	5,070									
Jun-06	3.12	3.11	2.00	0.06	3.93	15.56	9.72	2.98E-04	4,090									
Jul-06	4.29	4.27	2.71	0.08	5.53	9.28	13.66	4.19E-04	5,752									
Aug-06	4.04	4.02	2.55	0.08	5.19	9.16	12.85	3.94E-04	5,407									
Sep-06	4.30	4.28	2.73	0.08	5.50	13.12	13.60	4.17E-04	5,724									
Oct-06	4.07	4.05	2.59	0.08	5.20	13.12	12.86	3.94E-04	5,412									
Nov-06	4.00	3.98	2.54	0.08	5.12	11.86	12.66	3.88E-04	5,328									
Dec-06	3.16	3.14	2.00	0.06	4.03	10.38	9.96	3.05E-04	4,191									
Jan-07	4.03	4.01	2.56	0.08	5.15	12.41	12.73	3.91E-04	5,359									
Feb-07	3.79	3.77	2.40	0.07	4.86	10.35	12.01	3.69E-04	5,057									
Mar-07	4.41	4.39	2.80	0.09	5.65	12.45	13.98	4.29E-04	5,884									
Apr-07	4.08	4.06	2.59	0.08	5.19	14.91	12.83	3.94E-04	5,401									
May-07	3.70	3.68	2.35	0.07	4.73	11.57	11.69	3.59E-04	4,921									
Jun-07	4.54	4.52	2.87	0.09	5.83	11.57	14.42	4.42E-04	6,070									
Jul-07	3.98	3.96	2.53	0.08	5.06	14.39	12.52	3.84E-04	5,272									
Aug-07	4.31	4.29	2.73	0.08	5.51	12.65	13.63	4.18E-04	5,736									
Sep-07	4.22	4.20	2.68	0.08	5.40	12.22	13.36	4.10E-04	5,624									
Oct-07	4.40	4.38	2.79	0.09	5.62	14.00	13.90	4.26E-04	5,849									
Nov-07	4.05	4.03	2.57	0.08	5.18	11.56	12.82	3.93E-04	5,395									
Dec-07	3.03	3.01	1.92	0.06	3.88	8.48	9.58	2.94E-04	4,035	**48.19**	**47.97**	**30.59**	**0.93**	**61.54**	**152.76**	**152.19**	**4.67E-03**	**64,064**
Jan-08	2.84	2.83	1.81	0.06	3.63	9.35	8.97	2.75E-04	3,777	47.50	47.29	30.15	0.92	60.68	149.28	150.06	4.60E-03	63,166
Feb-08	3.50	3.49	2.21	0.07	4.51	7.60	11.15	3.42E-04	4,692	47.32	47.10	30.02	0.92	60.47	146.13	149.54	4.59E-03	62,948
Mar-08	4.26	4.24	2.71	0.08	5.44	13.96	13.44	4.12E-04	5,659	47.16	46.95	29.93	0.91	60.27	145.94	149.05	4.57E-03	62,743
Apr-08	4.12	4.11	2.62	0.08	5.26	14.13	13.00	3.99E-04	5,472	47.04	46.83	29.84	0.91	60.13	144.09	148.68	4.56E-03	62,588
May-08	4.11	4.09	2.61	0.08	5.27	11.52	13.03	4.00E-04	5,483	47.18	46.97	29.92	0.92	60.32	142.80	149.17	4.58E-03	62,795
Jun-08	3.76	3.74	2.38	0.07	4.82	10.13	11.91	3.65E-04	5,015	47.50	47.28	30.12	0.92	60.77	140.09	150.27	4.61E-03	63,257
Jul-08	4.07	4.05	2.59	0.08	5.19	13.78	12.83	3.94E-04	5,400	47.38	47.17	30.05	0.92	60.60	142.34	149.85	4.60E-03	63,081
Aug-08	4.18	4.17	2.65	0.08	5.37	10.72	13.28	4.07E-04	5,590	47.46	47.25	30.10	0.92	60.69	143.12	150.07	4.60E-03	63,173
Sep-08	3.75	3.73	2.38	0.07	4.80	11.02	11.86	3.64E-04	4,992	47.18	46.97	29.92	0.92	60.34	142.07	149.20	4.58E-03	62,807
Oct-08	3.87	3.85	2.46	0.08	4.95	11.79	12.24	3.75E-04	5,151	47.08	46.87	29.86	0.91	60.21	141.40	148.89	4.57E-03	62,677
Nov-08	3.64	3.62	2.31	0.07	4.66	10.00	11.53	3.54E-04	4,854	46.90	46.69	29.74	0.91	59.98	140.47	148.33	4.55E-03	62,440
Dec-08	3.10	3.08	1.96	0.06	3.98	7.90	9.83	3.02E-04	4,138	46.87	46.66	29.72	0.91	59.96	139.23	148.27	4.55E-03	62,414
Jan-09	2.14	2.13	1.37	0.04	2.69	11.49	6.65	2.04E-04	2,800	45.93	45.72	29.13	0.89	58.73	138.78	145.23	4.46E-03	61,134
Feb-09	3.98	3.96	2.52	0.08	5.09	11.71	12.59	3.86E-04	5,299	46.02	45.82	29.19	0.89	58.84	139.46	145.52	4.46E-03	61,255
Mar-09	3.92	3.91	2.49	0.08	5.03	10.77	12.43	3.81E-04	5,234	45.78	45.57	29.04	0.89	58.53	138.61	144.74	4.44E-03	60,930
Apr-09	3.76	3.74	2.39	0.07	4.79	13.00	11.84	3.63E-04	4,983	45.62	45.41	28.93	0.89	58.33	137.66	144.25	4.43E-03	60,721
May-09	3.47	3.46	2.20	0.07	4.46	8.35	11.03	3.38E-04	4,643	45.50	45.30	28.86	0.88	58.20	136.05	143.92	4.41E-03	60,582
Jun-09	3.83	3.81	2.43	0.07	4.91	10.44	12.14	3.73E-04	5,112	45.15	44.94	28.63	0.88	57.74	135.48	142.78	4.38E-03	60,103
Jul-09	3.89	3.87	2.47	0.08	4.96	12.94	12.27	3.76E-04	5,165	45.10	44.90	28.60	0.88	57.69	134.76	142.65	4.38E-03	60,050
Aug-09	4.13	4.11	2.61	0.08	5.30	10.17	13.11	4.02E-04	5,520	45.01	44.81	28.54	0.87	57.58	133.52	142.40	4.37E-03	59,942
Sep-09	3.91	3.89	2.47	0.08	5.01	10.25	12.39	3.80E-04	5,215	44.85	44.65	28.44	0.87	57.39	132.53	141.91	4.35E-03	59,737
Oct-09	4.08	4.07	2.59	0.08	5.24	10.62	12.96	3.98E-04	5,454	44.70	44.50	28.34	0.87	57.20	130.84	141.44	4.34E-03	59,540
Nov-09	2.75	2.74	1.74	0.05	3.52	7.77	8.71	2.67E-04	3,668	44.05	43.85	27.93	0.86	56.37	128.94	139.39	4.28E-03	58,677
Dec-09	3.41	3.40	2.16	0.07	4.39	7.26	10.87	3.33E-04	4,575	44.24	44.04	28.05	0.86	56.63	128.33	140.03	4.30E-03	58,947
Jan-10	4.01	3.99	2.54	0.08	5.14	11.17	12.70	3.90E-04	5,346	44.82	44.62	28.41	0.87	57.38	129.24	141.90	4.35E-03	59,731
Feb-10	3.53	3.52	2.25	0.07	4.51	12.03	11.14	3.42E-04	4,691	44.84	44.64	28.43	0.87	57.38	131.46	141.90	4.35E-03	59,731
Mar-10	4.11	4.09	2.60	0.08	5.28	9.86	13.07	4.01E-04	5,500	44.77	44.57	28.38	0.87	57.30	129.41	141.71	4.35E-03	59,651

Apr-10	3.72	3.71	2.36	0.07	4.75	12.25	11.75	3.60E-04	4,945	44.57	44.37	28.25	0.87	57.05	128.47	141.08	4.33E-03	59,388
May-10	3.55	3.54	2.25	0.07	4.56	9.08	11.28	3.46E-04	4,748	44.29	44.09	28.07	0.86	56.70	127.25	140.21	4.30E-03	59,020
Jun-10	3.40	3.39	2.16	0.07	4.37	8.99	10.80	3.31E-04	4,544	44.11	43.91	27.96	0.86	56.47	126.68	139.65	4.28E-03	58,785
Jul-10	3.18	3.16	2.02	0.06	4.06	10.04	10.04	3.08E-04	4,224	43.66	43.47	27.67	0.85	55.91	124.81	138.25	4.24E-03	58,197
Aug-10	3.35	3.34	2.12	0.07	4.30	9.05	10.62	3.26E-04	4,471	43.25	43.05	27.41	0.84	55.37	123.97	136.92	4.20E-03	57,637
Sep-10	3.46	3.45	2.20	0.07	4.43	9.94	10.97	3.36E-04	4,616	43.10	42.91	27.32	0.84	55.19	123.43	136.48	4.19E-03	57,449
Oct-10	3.43	3.41	2.17	0.07	4.40	9.26	10.87	3.34E-04	4,577	42.88	42.69	27.18	0.83	54.91	122.17	135.79	4.17E-03	57,162
Nov-10	3.25	3.24	2.06	0.06	4.18	8.13	10.34	3.17E-04	4,351	42.69	42.50	27.06	0.83	54.67	121.23	135.20	4.15E-03	56,911
Dec-10	3.46	3.45	2.19	0.07	4.44	9.31	10.98	3.37E-04	4,620	42.87	42.68	27.17	0.83	54.90	121.94	135.77	4.17E-03	57,152
Jan-11	4.08	4.06	2.58	0.08	5.24	9.52	12.97	3.98E-04	5,459	43.84	43.65	27.77	0.85	56.18	120.95	138.93	4.26E-03	58,481
Feb-11	3.63	3.61	2.30	0.07	4.66	9.65	11.51	3.53E-04	4,847	43.67	43.47	27.66	0.85	55.96	119.92	138.39	4.25E-03	58,255
Mar-11	3.92	3.90	2.49	0.08	5.01	11.76	12.39	3.80E-04	5,217	43.67	43.47	27.66	0.85	55.95	120.42	138.37	4.24E-03	58,247
Apr-11	3.78	3.77	2.40	0.07	4.85	10.54	11.99	3.68E-04	5,047	43.68	43.48	27.67	0.85	55.98	119.19	138.45	4.25E-03	58,278
May-11	3.86	3.84	2.44	0.07	4.94	10.67	12.22	3.75E-04	5,143	43.87	43.68	27.79	0.85	56.22	120.35	139.04	4.27E-03	58,528
Jun-11	3.63	3.62	2.31	0.07	4.62	13.39	11.42	3.50E-04	4,809	43.77	43.58	27.73	0.85	56.08	121.83	138.68	4.25E-03	58,376
Jul-11	3.63	3.61	2.29	0.07	4.67	8.35	11.54	3.54E-04	4,859	43.64	43.45	27.64	0.85	55.93	119.53	138.31	4.24E-03	58,223
Aug-11	3.74	3.72	2.37	0.07	4.78	11.10	11.83	3.63E-04	4,978	43.45	43.25	27.52	0.84	55.67	120.00	137.67	4.22E-03	57,952
Sep-11	3.90	3.88	2.48	0.08	4.96	13.47	12.28	3.77E-04	5,167	43.44	43.25	27.53	0.84	55.65	121.61	137.61	4.22E-03	57,928
Oct-11	4.15	4.13	2.62	0.08	5.37	7.02	13.27	4.07E-04	5,588	43.48	43.28	27.54	0.85	55.71	119.81	137.77	4.23E-03	57,995
Nov-11	3.74	3.72	2.36	0.07	4.82	7.78	11.91	3.65E-04	5,012	43.97	43.77	27.85	0.86	56.36	119.82	139.37	4.28E-03	58,667
Dec-11	3.82	3.80	2.40	0.08	4.95	4.23	12.25	3.76E-04	5,157	44.17	43.97	27.97	0.86	56.64	118.30	140.06	4.30E-03	58,958
Jan-12	4.23	4.21	2.68	0.08	5.44	9.82	13.46	4.13E-04	5,666	44.28	44.08	28.04	0.86	56.79	117.63	140.44	4.31E-03	59,118
Feb-12	3.99	3.98	2.53	0.08	5.13	9.45	12.70	3.89E-04	5,344	44.51	44.31	28.18	0.87	57.11	116.34	141.22	4.33E-03	59,445
Mar-12	4.00	3.98	2.53	0.08	5.12	11.23	12.67	3.89E-04	5,334	44.46	44.26	28.15	0.87	57.03	117.02	141.02	4.33E-03	59,361
Apr-12	3.18	3.17	2.02	0.06	4.07	9.30	10.07	3.09E-04	4,237	44.19	43.99	27.97	0.86	56.69	115.55	140.18	4.30E-03	59,008
May-12	4.24	4.22	2.69	0.08	5.42	12.44	13.41	4.11E-04	5,646	44.53	44.33	28.19	0.87	57.12	117.23	141.24	4.33E-03	59,457
Jun-12	4.05	4.04	2.57	0.08	5.20	11.01	12.85	3.94E-04	5,410	44.85	44.65	28.40	0.87	57.53	118.24	142.27	4.36E-03	59,889
Jul-12	3.18	3.16	2.01	0.06	4.07	8.88	10.06	3.09E-04	4,235	44.85	44.65	28.40	0.87	57.54	117.66	142.29	4.36E-03	59,895
Aug-12	3.83	3.81	2.42	0.07	4.92	9.12	12.17	3.73E-04	5,125	45.09	44.89	28.55	0.88	57.85	117.69	143.06	4.39E-03	60,222
Sep-12	3.77	3.76	2.37	0.07	4.90	4.56	12.11	3.72E-04	5,098	45.25	45.05	28.64	0.88	58.08	115.00	143.63	4.41E-03	60,463
Oct-12	2.52	2.51	1.61	0.05	3.19	10.95	7.89	2.42E-04	3,323	44.80	44.59	28.36	0.87	57.48	115.85	142.14	4.36E-03	59,835
Nov-12	2.83	2.82	1.80	0.05	3.61	9.73	8.92	2.74E-04	3,756	44.58	44.38	28.23	0.87	57.19	116.65	141.44	4.34E-03	59,538
Dec-12	3.79	3.78	2.40	0.07	4.87	10.06	12.03	3.69E-04	5,065	44.75	44.55	28.33	0.87	57.41	117.02	141.96	4.36E-03	59,760
Jan-13	3.84	3.82	2.43	0.07	4.92	10.52	12.17	3.73E-04	5,124	44.63	44.43	28.26	0.87	57.25	117.52	141.57	4.34E-03	59,592
Feb-13	3.48	3.47	2.21	0.07	4.47	9.27	11.04	3.39E-04	4,649	44.56	44.36	28.21	0.87	57.15	117.33	141.33	4.34E-03	59,493
Mar-13	4.04	4.02	2.55	0.08	5.19	9.51	12.83	3.94E-04	5,402	44.62	44.41	28.24	0.87	57.24	116.20	141.55	4.34E-03	59,586
Apr-13	3.98	3.96	2.52	0.08	5.10	10.84	12.61	3.87E-04	5,310	44.71	44.51	28.31	0.87	57.37	116.35	141.86	4.35E-03	59,718
May-13	3.99	3.97	2.53	0.08	5.10	11.47	12.62	3.87E-04	5,311	44.78	44.58	28.35	0.87	57.45	116.76	142.06	4.36E-03	59,802
Jun-13	3.65	3.63	2.31	0.07	4.67	10.87	11.54	3.54E-04	4,858	44.79	44.58	28.35	0.87	57.47	115.50	142.12	4.36E-03	59,826
Jul-13	4.01	4.00	2.54	0.08	5.16	9.62	12.76	3.91E-04	5,371	44.98	44.78	28.47	0.88	57.72	116.13	142.73	4.38E-03	60,082
Aug-13	3.64	3.63	2.31	0.07	4.67	9.67	11.56	3.55E-04	4,865	44.93	44.73	28.44	0.87	57.66	115.41	142.60	4.37E-03	60,026
Sep-13	3.89	3.87	2.46	0.08	4.98	10.43	12.33	3.78E-04	5,189	44.93	44.73	28.43	0.88	57.67	113.89	142.62	4.38E-03	60,037
Oct-13	3.94	3.92	2.49	0.08	5.05	10.35	12.49	3.83E-04	5,259	44.82	44.62	28.37	0.87	57.52	115.56	142.23	4.36E-03	59,872
Nov-13	4.25	4.23	2.69	0.08	5.46	10.87	13.50	4.14E-04	5,682	45.08	44.88	28.54	0.88	57.84	117.11	143.03	4.39E-03	60,207
Dec-13	3.71	3.69	2.35	0.07	4.76	9.43	11.77	3.61E-04	4,954	45.02	44.82	28.51	0.88	57.74	119.71	142.79	4.38E-03	60,106
Jan-14	3.92	3.90	2.49	0.08	5.02	11.47	12.41	3.81E-04	5,225	44.87	44.67	28.41	0.87	57.53	120.53	142.26	4.36E-03	59,885
Feb-14	3.85	3.83	2.44	0.07	4.92	11.47	12.16	3.73E-04	5,120	44.79	44.59	28.37	0.87	57.42	121.54	142.00	4.36E-03	59,773
Mar-14	4.48	4.46	2.82	0.09	5.80	6.37	14.34	4.40E-04	6,036	45.03	44.83	28.51	0.88	57.76	119.11	142.83	4.38E-03	60,125
Apr-14	4.15	4.13	2.63	0.08	5.30	12.25	13.11	4.02E-04	5,520	45.52	45.31	28.82	0.89	58.37	120.59	144.36	4.43E-03	60,766
May-14	4.31	4.29	2.74	0.08	5.52	12.85	13.65	4.19E-04	5,744	45.55	45.35	28.84	0.89	58.42	120.79	144.47	4.43E-03	60,816
Jun-14	4.01	3.99	2.55	0.08	5.12	12.91	12.66	3.88E-04	5,329	45.53	45.33	28.83	0.89	58.38	121.74	144.38	4.43E-03	60,775
Jul-14	4.33	4.31	2.74	0.08	5.53	13.21	13.68	4.20E-04	5,757	46.11	45.90	29.20	0.90	59.11	123.91	146.18	4.48E-03	61,536
Aug-14	3.82	3.81	2.42	0.07	4.90	10.83	12.11	3.71E-04	5,096	46.10	45.90	29.20	0.90	59.10	124.76	146.15	4.48E-03	61,521
Sep-14	4.02	4.00	2.55	0.08	5.15	11.17	12.74	3.91E-04	5,361	46.22	46.02	29.29	0.90	59.23	128.06	146.46	4.49E-03	61,653
Oct-14	4.04	4.02	2.56	0.08	5.16	12.29	12.77	3.92E-04	5,377	46.98	46.77	29.76	0.91	60.21	128.73	148.90	4.57E-03	62,680
Nov-14	3.94	3.92	2.50	0.08	5.05	11.00	12.48	3.83E-04	5,254	47.54	47.32	30.11	0.92	60.93	129.37	150.68	4.62E-03	63,429
Dec-14	4.55	4.53	2.88	0.09	5.84	11.85	14.43	4.43E-04	6,075	47.91	47.70	30.35	0.93	61.42	130.26	151.88	4.66E-03	63,934
Jan-15	0.09	0.09	0.09	0.00	0.00	11.02	0.00	0.00E+00	0	46.04	45.83	29.18	0.89	58.96	130.51	145.80	4.47E-03	61,373
Feb-15	0.08	0.08	0.08	0.00	0.00	10.36	0.00	0.00E+00	0	44.34	44.14	28.11	0.86	56.72	131.06	140.27	4.30E-03	59,048
Mar-15	0.09	0.09	0.09	0.00	0.00	11.64	0.00	0.00E+00	0	42.37	42.18	26.88	0.82	54.13	132.12	133.86	4.11E-03	56,347
Apr-15	0.08	0.08	0.08	0.00	0.00	10.79	0.00	0.00E+00	0	40.42	40.24	25.67	0.78	51.58	132.09	127.55	3.91E-03	53,692
May-15	0.08	0.08	0.08	0.00	0.00	10.69	0.00	0.00E+00	0	38.47	38.30	24.44	0.74	49.03	131.70	121.24	3.72E-03	51,037
Jun-15	0.09	0.09	0.09	0.00	0.00	11.34	0.00	0.00E+00	0	36.69	36.52	23.33	0.71	46.69	131.94	115.47	3.54E-03	48,607
Jul-15	0.10	0.10	0.10	0.00	0.00	12.60	0.00	0.00E+00	0	34.73	34.58	22.11	0.67	44.11	133.43	109.09	3.35E-03	45,922
Aug-15	0.09	0.09	0.09	0.00	0.00	10.94	0.00	0.00E+00	0	32.95	32.80	21.00	0.63	41.78	134.07	103.31	3.17E-03	43,490
Sep-15	0.08	0.08	0.08	0.00	0.00	10.80	0.00	0.00E+00	0	31.05	30.91	19.81	0.60	39.29	134.25	97.15	2.98E-03	40,895
Oct-15	0.09	0.09	0.09	0.00	0.00	11.03	0.00	0.00E+00	0	29.12	28.99	18.61	0.56	36.76	134.59	90.90	2.79E-03	38,266
Nov-15	0.08	0.08	0.08	0.00	0.00	10.29	0.00	0.00E+00	0	27.04	26.92	17.30	0.52	34.03	134.30	84.15	2.58E-03	35,425
Dec-15	0.08	0.08	0.08	0.00	0.00	9.58	0.00	0.00E+00	0	25.22	25.11	16.17	0.48	31.65	134.37	78.27	2.40E-03	32,948
Maximum	**4.56**	**4.54**	**2.90**	**0.09**	**5.84**	**17.85**	**14.43**	**4.43E-04**	**6,075**	**48.19**	**47.97**	**30.59**	**0.93**	**61.54**	**152.76**	**152.19**	**4.67E-03**	**64,064**

Table B-15. Proposed Lumber Increases via Project

Material	Past Potential Throughput	Future Potential Throughput	Throughput Increase
Wood/Lumber (MMBF/yr)	215.3	260	44.7
Wood/Lumber (tpy)[1]	796,610	962,000	165,390

1. Wood/Lumber [tpy] = Wood/Lumber [MMBF/yr] × 3.7 tons/MBF × 1,000 MBF/MMBF. A factor of 3.7 tons/MBF was provided by the mill (for 2015 CY).

Table B-16. Emission Increases for Sawing and Debarking

Emission Source	Annual Hours of Operation	Pollutant	Emission Factor (lb/ton)	Control Efficiency (%)[1]	Potential Emissions Increase (lb/hr)[2]	(tpy)[3]
Log Sawing[4]	8,760	PM	0.350	90%	0.66	2.89
		PM_{10}	0.200	90%	0.38	1.65
		$PM_{2.5}$[6]	0.200	90%	0.38	1.65
Debarking[5]	8,760	PM	0.020	0%	0.38	1.65
		PM_{10}	0.011	0%	0.21	0.91
		$PM_{2.5}$[6]	0.011	0%	0.21	0.91

1. Based on guidance from the Texas Commission on Environmental Quality (TCEQ) entitled "Rock Crushing Plants" (Feb. 2002), a control efficiency of 90% should be applied for work performed fully enclosed.

2. Potential Hourly Emissions Increase [lb/hr] = Potential Annual Emissions Increase [tpy] × 2,000 lb/ton / Annual Hours of Operation [hr/yr]

3. Potential Annual Emissions Increase [tpy] = Emission factor [lb/ton] × (1 - Control Efficiency [%]) × Associated Throughput Increase [ton/yr] / 2,000 lb/ton

4. Emission factors from EIIP Uncontrolled Emission Factors (July 2001), per the Factor Information Retrieval (FIRE) database management system, version 6.23 for SCC Code 3-07-008-02, Log Sawing.

5. Emission factors from EIIP Uncontrolled Emission Factors (July 2001), per the Factor Information Retrieval (FIRE) database management system, version 6.23 for SCC Code 3-07-008-01, Log Debarking.

6. It is assumed that $PM_{10} = PM_{2.5}$.

Table B-17. Proposed Byproduct Increases via Project

Material	Past Potential Throughput[1] (tpy)	Future Potential Throughput[1] (tpy)	Increase (tpy)
Chips	206,410	249,264	42,854
Bark	72,590	87,661	15,071
Sawdust	46,150	55,732	9,582
Shavings	42,527	51,356	8,829

1. Ratios of byproduct production to lumber production are based on the 2015 operations at the Preston facility.

Table B-18. Emission Increases for Material Transfer Sources

Emission Source	Annual Hours of Operation	Calculated Emission Factors[1] (lb/ton)			Potential Hourly Emissions Increase[2] (lb/hr)			Potential Annual Emissions Increase[3] (tpy)		
		PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
Chip Truck Loading	8,760	3.98E-04	1.88E-04	2.85E-05	1.95E-03	9.21E-04	1.39E-04	8.53E-03	4.03E-03	6.11E-04
Bark Truck Loading	8,760	3.98E-04	1.88E-04	2.85E-05	6.85E-04	3.24E-04	4.91E-05	3.00E-03	1.42E-03	2.15E-04
Sawdust Truck Loading	8,760	3.98E-04	1.88E-04	2.85E-05	4.35E-04	2.06E-04	3.12E-05	1.91E-03	9.02E-04	1.37E-04
Shavings Truck Loading	8,760	3.98E-04	1.88E-04	2.85E-05	4.01E-04	1.90E-04	2.87E-05	1.76E-03	8.31E-04	1.26E-04
Bark Transfer	8,760	3.98E-04	1.88E-04	2.85E-05	6.85E-04	3.24E-04	4.91E-05	3.00E-03	1.42E-03	2.15E-04
Sawdust Transfer	8,760	3.98E-04	1.88E-04	2.85E-05	4.35E-04	2.06E-04	3.12E-05	1.91E-03	9.02E-04	1.37E-04
Chips Transfer	8,760	3.98E-04	1.88E-04	2.85E-05	1.95E-03	9.21E-04	1.39E-04	8.53E-03	4.03E-03	6.11E-04
Shavings Transfer	8,760	3.98E-04	1.88E-04	2.85E-05	4.01E-04	1.90E-04	2.87E-05	1.76E-03	8.31E-04	1.26E-04

1. Emission factor per AP-42 Section 13.2.4, *Aggregate Handling and Storage Piles* (Nov. 2006), Equation 1, as follows:

E = k(0.0032)[(U/5)^1.3]/[(M/2)^1.4]

where E = emission factor in pounds per ton
k = particle size multiplier as follows:
0.74 for PM
0.35 for PM_{10}
0.053 for $PM_{2.5}$
U = 6.408 mph; average wind speed for Augusta, GA from TANKS 4.0.9d
M = 9 %; material moisture content (engineering estimate)

2. Potential Hourly Emissions Increase [lb/hr] = Potential Annual Emissions Increase [tpy] × 2,000 lb/ton / Annual Hours of Operation [hr/yr]
3. Potential Annual Emissions Increase [tpy] = Emission Factor [lb/ton] × Associated Throughput Increase [ton/year] / 2,000 lb/ton

Table B-19. Proposed Lumber Increases via Project

Material	Past Potential Throughput[1] (tpy)	Future Potential Throughput[1] (tpy)	Increase (tpy)
Chipper	206,410	249,264	42,854

1. Throughputs for the chipper are based on the past potential and future potential production of chips at the facility, respectively.

Table B-20. Emission Increases for Chipper

Emission Source	Annual Hours of Operation	Pollutant	Emission Factor[1] (lb/ton)	Control Efficiency[2] (%)	Emissions Increase (lb/hr)[3]	Emissions Increase (tpy)[4]
Chipper	8,760	PM	0.020	90%	9.78E-03	4.29E-02
		PM_{10}	0.011	90%	5.38E-03	2.36E-02
		$PM_{2.5}$[5]	0.011	90%	5.38E-03	2.36E-02

1. Emission factors from EIIP Uncontrolled Emission Factors (July 2001), per the Factor Information Retrieval (FIRE) database management system, version 6.23 for SCC Code 3-07-008-01, Log Debarking.
2. Based on guidance from the Texas Commission on Environmental Quality (TCEQ) entitled "Rock Crushing Plants" (Feb. 2002), a control efficiency of 90% should be applied for work performed fully enclosed.
3. Potential Hourly Emissions Increase [lb/hr] = Potential Annual Emissions Increase [tpy] × 2,000 lb/ton / Annual Hours of Operation [hr/yr]
4. Potential Emissions Increase [tpy] = Emission factor [lb/ton] × (1 - Control Efficiency [%]) × Associated Throughput Increase [ton/yr] / 2,000 lb/ton
5. It is assumed that PM_{10} = $PM_{2.5}$.

Table B-21. Proposed Road Traffic Increases

Material	Past Potential Number of Trucks Per Year[1]	Future Potential Number of Trucks Per Year[2]	Truck Increase Per Year
Log Truck	22,879	27,629	4,750
Lumber Truck	7,455	9,003	1,548
Bark Truck	174	210	36
Chip Truck	7,223	8,723	1,500
Shavings Truck	1,326	1,601	275
Biofuel Truck	89	107	18

1. Past potential number of trucks per year data based on 2015 operations.
2. Future potential trucks per year = Past potential trucks per year × (Future potential production [MMBF/yr]/ Past potential production [MMBF/yr]).

Table B-22. Inputs for Increased Emissions from Road Travel

Source	Truck Weight Empty[1] (tons)	Truck Weight Loaded[1] (tons)	Average Weight (W) (tons)	Distance Traveled per Round Trip[1] Paved Roads (ft)	Distance Traveled per Round Trip[1] Unpaved Roads (ft)	Events Per Year[1] (Days)	Increase in Number of Trucks Per Day	Increase in Vehicle Miles Traveled[2] Paved Roads (VMT/day)	Paved Roads (VMT/yr)	Unpaved Roads (VMT/day)	Unpaved Roads (VMT/yr)
Log Truck	16	43	29.5	-	7,392	365	13.01	-	-	18.22	6,650
Lumber Truck	16	39	27.5	-	7,392	365	4.24	-	-	5.94	2,167
Bark Truck	16	27	21.5	-	7,392	365	0.10	-	-	0.14	51
Chip Truck	16	27	21.5	-	7,392	365	4.11	-	-	5.75	2,099
Shavings Truck	16	27	21.5	-	7,392	365	0.75	-	-	1.06	385
Biofuel Truck	16	27	21.5	-	7,392	365	0.05	-	-	0.07	26

1. Engineering estimate for trucks empty and loaded weights. The distance travelled on-site provided by Interfor.
2. The past potential vehicle miles traveled (VMT) per year value for the forklifts and bobcats at the Augusta Mill are 198,750 VMT/yr for the all the forklifts and 25,000 VMT/yr for all the bobcats. The values were rounded up to account for the increase in production using the following equation:
Future potential vehicle miles traveled [VMT/yr] = Past potential vehicle miles traveled [VMT/yr] × (Future potential throughput [MMBF/yr] / Past potential throughput [MMBF/yr] - 1).
The values shown here represent the increase from past potential VMT/yr to future potential VMT/yr.

Table B-23. Potential Hourly Fugitive Emission Increases from Road Travel

Source	Emission Factor[1] (lb/VMT) PM	PM_{10}	$PM_{2.5}$	Increase in Potential Fugitive Emissions[2] Filterable PM (lb/hr)	Filterable PM_{10} (lb/hr)	Filterable $PM_{2.5}$ (lb/hr)
Unpaved Road Travel						
Log Truck	5.34	1.52	0.15	4.05	1.16	0.12
Lumber Truck	5.17	1.47	0.15	1.28	0.36	0.04
Bark Truck	4.63	1.32	0.13	0.03	0.01	0.00
Chip Truck	4.63	1.32	0.13	1.11	0.32	0.03
Shavings Truck	4.63	1.32	0.13	0.20	0.06	0.01
Biofuel Truck	4.63	1.32	0.13	0.01	3.90E-03	3.90E-04
Total Road Emissions				**6.69**	**1.91**	**0.19**

1. Unpaved Roads Emission Factor (lb/VMT) = [k (s/12)^a × (W/3)^b] × (100% - % control efficiency), per AP-42 Section 13.2.2, Unpaved Roads (Nov. 2006), Equation 1a, with variables defined as follows:

PM - k (lb/VMT) =	4.9	Particle size multiplier for PM per AP-42, Table 13.2.2-2
PM_{10} - k (lb/VMT) =	1.5	Particle size multiplier for PM_{10} per AP-42, Table 13.2.2-2
$PM_{2.5}$ - k (lb/VMT) =	0.15	Particle size multiplier for $PM_{2.5}$ per AP-42, Table 13.2.2-2
PM - a =	0.7	Empirical constant for PM per AP-42, Table 13.2.2-2
PM_{10} and $PM_{2.5}$ - a =	0.9	Empirical constant for PM_{10} and $PM_{2.5}$ per AP-42, Table 13.2.2-2
b =	0.45	Empirical constant for industrial roads per AP-42, Table 13.2.2-2
s (%) =	8.4	Surface silt content based on median value for lumber sawmills per AP-42, Table 13.2.2-1
% control efficiency =	50.0	% control efficiency

2. Potential emissions calculated as appropriate emission factor multiplied by vehicle miles traveled per time period. Note, Interfor conservatively estimated hourly emissions using the emission factor on a daily basis because an emission factor on an hourly basis calculated per Equation 3 results in lower potential emissions.

Table B-24. Potential Annual Fugitive Emission Increases from Road Travel

Source	Emission Factor[1] (lb/VMT) PM	PM_{10}	$PM_{2.5}$	Increase in Potential Fugitive Emissions[3] Filterable PM (tpy)	Filterable PM_{10} (tpy)	Filterable $PM_{2.5}$ (tpy)
Unpaved Road Travel						
Log Truck	3.58	1.02	0.10	11.92	3.40	0.34
Lumber Truck	3.47	0.99	0.10	3.76	1.07	0.11
Bark Truck	3.11	0.89	0.09	0.08	0.02	0.00
Chip Truck	3.11	0.89	0.09	3.26	0.93	0.09
Shavings Truck	3.11	0.89	0.09	0.60	0.17	0.02
Biofuel Truck	3.11	0.89	0.09	0.04	0.01	0.00
Total Road Emissions				19.66	5.60	0.56

1. Unpaved Roads Emission Factor (lb/VMT) = [k (s/12)^a × (W/3)^b] × [(365 - P)/365] × (100% - % control efficiency), per AP-42 Section 13.2.2, *Unpaved Roads* (Nov. 2006), Equations 1a and 2, with variables defined as follows:

PM - k (lb/VMT) =	4.9	Particle size multiplier for PM per AP-42, Table 13.2.2-2
PM_{10} - k (lb/VMT) =	1.5	Particle size multiplier for PM_{10} per AP-42, Table 13.2.2-2
$PM_{2.5}$ - k (lb/VMT) =	0.15	Particle size multiplier for $PM_{2.5}$ per AP-42, Table 13.2.2-2
PM - a =	0.7	Empirical constant for PM per AP-42, Table 13.2.2-2
PM_{10} and $PM_{2.5}$ - a =	0.9	Empirical constant for PM_{10} and $PM_{2.5}$ per AP-42, Table 13.2.2-2
b =	0.45	Empirical constant for industrial roads per AP-42, Table 13.2.2-2
s (%) =	8.4	Surface silt content based on median value for lumber sawmills per AP-42, Table 13.2.2-1
P =	120	No. days with rainfall greater than 0.01 inch, Per AP-42, Figure 13.2.2-1
% control efficiency =	50.0	% control efficiency

3. Potential emissions calculated as appropriate emission factor multiplied by vehicle miles traveled per time period. Note, Interfor conservatively estimated hourly and annual emissions using the emission factor on a daily basis because an emission factor on an hourly basis calculated per Equation 3 results in lower potential emissions.

Table B-25. Continuous Kiln Information

Kiln ID	Heat Input[1] (MMBtu/hr)	Fuel HHV[2] (Btu/lb)	Annual Hours of Operation (hr/yr)	Production Capacity[3] (MBF/hr)	(MMBF/yr)
Kiln 3	35.0	4,500	8,760	6.8	60
Kiln 4	36.0	4,500	8,760	11.4	100
Kiln 5	40.0	4,500	8,760	11.4	100

1. Used modified burner capacity for Kiln 5 and existing burner capacity for Kiln 4. New Kiln 3 burner capacity per prior calculations.

2. The average high heating value for wood/bark/fines is 4,500 Btu/lb, per U.S. EPA's AP-42, Section 1.6, *Wood Residue Combustion in Boilers* (Sept. 2003).

3. Using potential capacity data per originally provided data.

Table B-26. Potential Emissions from Direct-Fired Continuous Kilns[1]

Pollutant	Kiln 3 Emissions (lb/hr)	(tpy)	Kiln 4 Emissions (lb/hr)	(tpy)	Kiln 5 Emissions (lb/hr)	(tpy)	Total Modified Kiln PTE (lb/hr)	(tpy)
PM[3]	2.60	11.40	4.34	19.00	4.34	19.00	11.28	49.40
Total PM_{10}[3]	3.49	15.30	5.82	25.50	5.82	25.50	15.14	66.30
Total $PM_{2.5}$[3]	2.53	11.10	4.22	18.50	4.22	18.50	10.98	48.10
SO_2	0.88	3.83	0.90	3.94	1.00	4.38	2.78	12.15
NO_X	2.47	10.80	4.11	18.00	4.11	18.00	10.68	46.80
Total VOC[2]	26.41	115.69	44.02	192.82	44.02	192.82	114.46	501.33
CO	2.12	9.30	3.54	15.50	3.54	15.50	9.20	40.30
TRS, H2S, H2SO4, Fluoride	Negligible		Negligible		Negligible		Negligible	
Lead	5.39E-04	2.36E-03	5.54E-04	2.43E-03	1.54E-05	6.75E-05	1.11E-03	4.86E-03
CO_2e	7,396	32,395	7,607	33,320	8,453	37,023	23,456	102,738

1. Potential annual emissions were calculated using the following equations based on the units of the emission factor:
Potential emissions [tpy] = Emission factor [lb/MBF] * Annual production capacity [MMBF/yr] * 1,000 / 2,000 lb/ton
Potential emissions [tpy] = Emission factor [lb/MMBtu] * Heat input capacity [MMBtu/hr] * Annual hours of operation [hr/yr] / 2,000 lb/ton
2. VOC is computed as terpene + methanol + formaldehyde.
3. Total PM/PM_{10}/$PM_{2.5}$ emissions are the sum of filterable and condensible particulate.

Table B-27. New Kiln 3 Fuel Storage Silo Potential Emissions

Pollutant	Emission Factor [1] (gr/scf)	Exhaust Flow [2] (scfm)	Annual Operation (hr/yr)	Potential Emissions [3] (lb/hr)	(tpy)
PM	0.02	5,000	8,760	0.86	3.75
PM_{10}	8.00E-03			0.34	1.50
$PM_{2.5}$	4.00E-03			0.17	0.75

1. PM_{10} is 40% of PM and $PM_{2.5}$ is 20% of PM, per EPA's "PM Calculator" on http://www.epa.gov/ttn/chief/eiinformation.html for SCC.
2. Worst-case exhaust flow rate identified by Interfor for new cyclone, as the control device has not yet been selected for project.
3. Potential Emissions (lb/hr) = Exhaust Flow Rate (scfm) x Exit Grain Loading (grain/ft$^{3)}$ x (1 lb/7,000 grains) x (60 min/hr).

Table B-28. Modified Units - Emission Increases

Pollutant	K3, K4, K5 New Potential (tpy)	K3, K4, K5 Baseline Actual (tpy)	Emissions Increase (tpy)
PM	49.40	19.56	29.84
Total PM_{10}	66.30	25.41	40.89
Total $PM_{2.5}$	48.10	2.15E+01	26.59
SO_2	12.15	7.88	4.27
NO_X	46.80	14.63	32.17
Total VOC	501.33	262.76	238.57
CO	40.30	36.58	3.72
TRS, H_2S, H_2SO_4, Fluoride	Negligible		-
Lead	4.86E-03	4.86E-03	0
CO_2e	102,738	66,641	36,097

Table B-29. New Kiln 3 Fuel Silo Emissions

Pollutant	Potential Emissions (tpy)
PM	3.75
Total PM_{10}	1.50
Total $PM_{2.5}$	0.75
SO_2	-
NO_X	-
Total VOC	-
CO	-
TRS, H_2S, H_2SO_4, Fluoride	-
Lead	-
CO_2e	-

Table B-30. Total Emissions Increase from Associated Units

Pollutant	Potential Emissions Increase (tpy)
PM	24.28
Total PM_{10}	8.20
Total $PM_{2.5}$	3.15
SO_2	-
NO_X	-
Total VOC	-
CO	-
TRS, H_2S, H_2SO_4, Fluoride	-
Lead	-
CO_2e	-

Table B-31. Emissions Increase Over Baseline and PSD Triggering Analysis (Step 1)

Pollutant	Emissions Increase Modified Units (tpy)	New Unit (tpy)	Associated Units (tpy)	Total (tpy)	PSD SER Thresholds (tpy)	PSD Permitting Triggered?
PM	29.84	3.75	24.28	57.88	25	Yes
Total PM_{10}	40.89	1.50	8.20	50.60	15	Yes
Total $PM_{2.5}$	26.59	0.75	3.15	30.49	10	Yes
SO_2	4.27	-	-	4.27	40	No
NO_X	32.17	-	-	32.17	40	No
Total VOC	238.57	-	-	238.57	40	Yes
CO	3.72	-	-	3.72	100	No
TRS, H_2S, H_2SO_4, Fluoride		Negligible			N/A	N/A
Lead	0	-	-	0	0.6	No
CO_2e	36,097	-	-	36,097	75,000	No

Table B-32. Contemporaneous Emission Decreases

Pollutant	Total Shutdown Emissions (tpy)
PM	48.19
Total PM_{10}	47.97
Total $PM_{2.5}$	30.59
SO_2	0.93
NO_X	61.54
VOC	152.19
CO	152.76
TRS, H_2S, H_2SO_4, Fluoride	N/A
Lead	4.67E-03
CO_2e	64,064

Table B-33. Netting Analysis

Pollutant	Project Emission Increases (tpy)	Contemporaneous Emission Decreases (tpy)	Net Emission Increases (tpy)	PSD SER Thresholds (tpy)	PSD Permitting Triggered?
PM	57.88	48.19	9.69	25	No
Total PM_{10}	50.60	47.97	2.63	15	No
Total $PM_{2.5}$	30.49	30.59	-0.09	10	No
SO_2	4.27	0.93	3.34	40	No
NO_X	32.17	61.54	(29.38)	40	No
VOC	238.57	152.19	86.38	40	Yes
CO	3.72	152.76	(149.04)	100	No
TRS, H_2S, H_2SO_4, Fluoride		Negligible		N/A	N/A
Lead	0	4.67E-03	-4.67E-03	0.6	No
CO_2e	36,097	64,064	(27,967)	75,000	No

Table B-34. Proposed Bark Throughput for Loadout System

Material	Future Potential Throughput[1] (tpy)
Bark	87,661

1. Ratios of byproduct production to lumber production are based on the 2015 operations at the Preston facility.

Table B-35. Bark Transfer Sources Potential Emissions

Emission Source	Annual Hours of Operation	Calculated Emission Factors[1] (lb/ton)			Potential Hourly Emissions[2] (lb/hr)			Potential Annual Emissions[3] (tpy)		
		PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
Bark Truck Loading	8,760	3.98E-04	1.88E-04	2.85E-05	3.98E-03	1.88E-03	2.85E-04	1.74E-02	8.25E-03	1.25E-03
Bark Hopper #1	8,760	3.98E-04	1.88E-04	2.85E-05	3.98E-03	1.88E-03	2.85E-04	1.74E-02	8.25E-03	1.25E-03
Bark Hopper #2	8,760	3.98E-04	1.88E-04	2.85E-05	3.98E-03	1.88E-03	2.85E-04	1.74E-02	8.25E-03	1.25E-03
Bark Storage Bin	8,760	3.98E-04	1.88E-04	2.85E-05	3.98E-03	1.88E-03	2.85E-04	1.74E-02	8.25E-03	1.25E-03

1. Emission factor per AP-42 Section 13.2.4, *Aggregate Handling and Storage Piles* (Nov. 2006), Equation 1, as follows:

E = k(0.0032)[(U/5)^1.3]/[(M/2)^1.4]

where E = emission factor in pounds per ton
k = particle size multiplier as follows:
0.74 for PM
0.35 for PM_{10}
0.053 for $PM_{2.5}$
U = 6.408 mph; average wind speed for Augusta, GA from TANKS 4.0.9d
M = 9 %; material moisture content (engineering estimate)

2. Potential Hourly Emissions [lb/hr] = Potential Annual Emissions [tpy] × 2,000 lb/ton / Annual Hours of Operation [hr/yr]
3. Potential Annual Emissions [tpy] = Emission Factor [lb/ton] × Potential Throughput [ton/year] / 2,000 lb/ton

Table B-36. Bark Hogger Potential Emissions

Emission Source	Annual Hours of Operation	Pollutant	Emission Factor[1] (lb/ton)	Control Efficiency (%)	Potential Emissions (lb/hr)[2]	Potential Emissions (tpy)[3]
Hogger	8,760	PM	0.020	0%	2.00E-01	8.77E-01
		PM_{10}	0.011	0%	1.10E-01	4.82E-01
		$PM_{2.5}$[4]	0.011	0%	1.10E-01	4.82E-01

1. Emission factors from EIIP Uncontrolled Emission Factors (July 2001), per the Factor Information Retrieval (FIRE) database management system, version 6.23 for SCC Code 3-07-008-01, Log Debarking.
2. Potential Hourly Emissions [lb/hr] = Potential Annual Emissions [tpy] × 2,000 lb/ton / Annual Hours of Operation [hr/yr]
3. Potential Emissions [tpy] = Emission factor [lb/ton] × (1 - Control Efficiency [%]) × Potential Throughput [ton/yr] / 2,000 lb/ton
4. It is assumed that PM_{10} = $PM_{2.5}$.

Table B-37. Bark Loadout System Emissions and PSD Triggering Analysis (Step 1)

Pollutant	Potential Emissions Bark Transfer Sources (tpy)	Bark Hogger (tpy)	Total (tpy)	PSD SER Thresholds (tpy)	PSD Permitting Triggered?
PM	0.07	0.88	0.95	25	No
Total PM_{10}	0.03	0.48	0.52	15	No
Total $PM_{2.5}$	5.00E-03	0.48	0.49	10	No
SO_2	-	-	0	40	No
NO_X	-	-	0	40	No
Total VOC	-	-	0	40	No
CO	-	-	0	100	No
TRS, H_2S, H_2SO_4, Fluoride	-	-	0	N/A	N/A
Lead	-	-	0	0.6	No
CO_2e	-	-	0	75,000	No

Appendix C
RTO – BACT Cost Calculations

Table C-1. Emission Units Subject to BACT Review

Unit	Max. Production Capacity	
Kiln No. 3	60	MMBF/yr
Kiln No. 4	100	MMBF/yr
Kiln No. 5	100	MMBF/yr

Table C-2. Potential Control Scenario Summary

Emission Unit	Pollutant	Control Basis	Current Potential Emissions [1]		Capture Efficiency [2]	Total Controlled Emissions Through the Stacks	
Kiln No. 3	VOC	RTO	3.86	lb/MBF	50.0%	0.039	lb/MBF
Kiln No. 4	VOC	RTO	3.86	lb/MBF	50.0%	0.039	lb/MBF
Kiln No. 5	VOC	RTO	3.86	lb/MBF	50.0%	0.039	lb/MBF

1. VOC as terpene + methanol + formaldehyde.

2. Engineering estimate based on North Carolina Department of Environment and Natural Resources Air Permit Review for Weyerhaeuser's Plymouth facility continuous kiln construction application, which estimated a 50% capture efficiency for emissions from a continuous lumber kiln. Note this is a conservative estimate since the capture from a batch kiln will be lesser, given the design of the batch kiln.

Table C-3. Potential Control Options Cost Summary

Emission Unit	Pollutant	Technology	Control Efficiency (%)	Baseline Emissions (tpy)	Capture Efficiency [1] (%)	Pollutant Removed (tpy)	Operating Cost ($/ton removed)
Kiln No. 3	VOC	RTO	98%	115.69	50.0%	56.69	$ 40,247
Kiln No. 4	VOC	RTO	98%	192.82	50.0%	94.48	$ 24,148
Kiln No. 5	VOC	RTO	98%	192.82	50.0%	94.48	$ 24,148

1. Engineering estimate based on North Carolina Department of Environment and Natural Resources Air Permit Review for Weyerhaeuser's Plymouth facility continuous kiln construction application, which estimated a 50% capture efficiency for emissions from a continuous lumber kiln. Note this is a conservative estimate since the capture from a batch kiln will be lesser, given the design of the batch kiln.

Table C-4. Cost Analysis Supporting Information for RTO

Parameter	Kiln No. 3	Kiln No. 4	Kiln No. 5	Units	Note(s)
Maximum Production Capacity	60	100	100	MMBF/yr	
Uncontrolled Stack Inlet Emissions (VOC)	57.85	96.41	96.41	tpy	1
Removal Efficiency	98	98	98	%	2
VOC Removed	56.69	94.48	94.48	tpy	3
Control Equip. Outlet Temperature	1,450	1,450	1,450	° F	4
Airflow	38,944	38,944	38,944	acfm	5
Airflow Capture Efficiency	50	50	50	%	6
Exhaust Temperature	130	130	130	° F	5
Air Moisture Content	13.6	13.6	13.6	%	5
Airflow	34,321	34,321	34,321	scfm	7
Specific Heat of Dry Air	6.85	6.85	6.85	Btu/lb-mole·°F	8
Specific Heat of Water	17.99	17.99	17.99	Btu/lb-mole·°F	8
Pressure Drop	19	19	19	inches of H_2O	9
Fan Motor Efficiency	70	70	70	%	10
Fan Electricity Usage	61.8	61.8	61.8	kW-hr	11
Energy Required From Fuel	59.12	59.12	59.12	MMBtu/hr	12
Natural Gas Heat Capacity	1,026	1,026	1,026	MMBtu/MMscf	13
Operating Labor Cost	12.0	12.0	12.0	$/hr	14
Maintenance Labor Cost	13.2	13.2	13.2	$/hr	14
Electricity Cost	0.06	0.06	0.06	$/kW-hr	15
Natural Gas Cost	3.3	3.3	3.3	$/1,000 scf	16
RTO Equipment Life	10	10	10	years	17
Interest Rate	7.0	7.0	7.0	%	17
1998 $ (2nd Quarter)	163.0	163.0	163.0	n/a	18
2002 $	179.9	179.9	179.9	n/a	18
2016 $ (January)	236.9	236.9	236.9	n/a	18

1. Potential inlet emissions based on maximum capacity and emissions., VOC as terpene + methanol + formaldehyde, and presumed capture efficiency (50%).
2. Per EPA Manual, Section 3.2, Chapter 2.
3. Pollutant Removed (tpy) = (Removal Efficiency, %) × (Emissions, tpy).
4. Based on average operating temperature (1,400-1,500) in U.S.EPA Fact Sheet: http://www.epa.gov/ttn/catc/dir1/fregen.pdf
5. Values based on stack test performed on Bibler Brothers Lumber Company continuous lumber kiln in Russellville, AR on March 12, 2009.
6. Engineering estimate based on North Carolina Department of Environment and Natural Resources Air Permit Review for Weyerhaeuser's Plymouth facility continuous kiln construction application, which estimated a 50% capture efficiency for emissions from a continuous lumber kiln.
7. Calculated based on fuel F-factor of 11,936 Btu/CF, and accounting for 18.78 percent oxygen based on information from Bibler Brothers Lumber Company March 12, 2009 stack test result and multiplied by the capture efficiency of 50%.
8. Standard value.
9. Based on example problem in EPA Manual, Section 3.2, Chapter 2, page 2-43.
10. Per EPA Manual, Section 3.2, Chapter 2, page 2-41, efficiency ranges from 40 to 70%. 70% is conservatively chosen.
11. Total Electricity usage based on Equation 2.42 of EPA Manual, Section 3.2, Chapter 2, page 2-41.
12. Estimated as Exhaust Gas Flow Rate, scfm *60, min/hr * Density (Air), 0.0026 lb-mole/scf * Specific Heat (Btu/lb-mole·°F) * (Operate Temp - Exhaust Temp, °F) / 1e6, based on the sensible heat integral, Q = m Cp (T1 - T2), where Q is the heat required, m is the mass flow rate of the air, Cp is the specific heat of air, T1 is the outlet temperature of the RTO, and T2 is the exhaust temperature from the equipment. Also incorporates energy required to heat water vapor.

13. Average natural gas heating value per 40 CFR 98.
14. Labor costs per EPA Manual, Section 3.1, Chapter 1, pages 1-29 and 1-37.
15. Based on EPA, Section 2, Chapter 3, page 3-32.
16. Based on EPA, Section 3.2, Chapter, 2, page 2-46
17. Based on example problem in EPA Manual, Section 3.2, Chapter 2, page 2-45.
18. Values based on U.S. Historical Consumer Price Index: ftp://ftp.bls.gov/pub/special.requests/cpi/cpiai.txt. 2016 information from http://www.bls.gov/cpi/cpid1601.pdf Table 24

Table C-5. Cost Analysis for RTO for VOC control

Capital Cost	**Kiln No. 3**	**Kiln No. 4**	**Kiln No. 5**	**EPA Notation[1]**
Purchased Equipment Costs				
Total Equipment Cost[2]	1,581,930	1,581,930	1,581,930	A
Instrumentation	158,193	158,193	158,193	0.10 × A
Sales Tax	47,458	47,458	47,458	0.03 × A
Freight	79,097	79,097	79,097	0.05 × A
Total Purchased Equipment Costs	*1,866,678*	*1,866,678*	*1,866,678*	*B = 1.18 × A*
Direct Installation Costs				
Foundations and Supports	149,334	149,334	149,334	0.08 × B
Handling and Erection	261,335	261,335	261,335	0.14 × B
Electrical	74,667	74,667	74,667	0.04 × B
Piping	37,334	37,334	37,334	0.02 × B
Insulation	18,667	18,667	18,667	0.01 × B
Painting	18,667	18,667	18,667	0.01 × B
Site Preparation & Buildings	-	-	-	-
Additional duct work	-	-	-	-
Total Direct Installation Costs	*560,003*	*560,003*	*560,003*	*C = 0.30 × B*
Indirect Installation Costs				
Engineering	186,668	186,668	186,668	0.10 × B
Construction and Field Expense	93,334	93,334	93,334	0.05 × B
Contractor Fees	186,668	186,668	186,668	0.10 × B
Start-up	37,334	37,334	37,334	0.02 × B
Performance Test	18,667	18,667	18,667	0.01 × B
Process Contingencies	56,000	56,000	56,000	0.03 × B
Total Indirect Installation Costs	*578,670*	*578,670*	*578,670*	*D = 0.31 × B*
Total Capital Investment ($)	**3,005,351**	**3,005,351**	**3,005,351**	**TCI = B + C + D**

Operating Cost	**Kiln No. 3**	**Kiln No. 4**	**Kiln No. 5**	**EPA Notation[1]**
Direct Annual Costs				
Operating Labor (0.5 hr, per 8-hr shift)	6,570	6,570	6,570	E
Supervisory Labor	986	986	986	F = 0.15 × E
Maintenance Labor (0.5 hr, per 8-hr shift)	7,227	7,227	7,227	G
Maintenance Materials	7,227	7,227	7,227	H = G
Electricity	32,502	32,502	32,502	I
Natural Gas	1,665,742	1,665,742	1,665,742	K
Total Direct Annual Costs	*1,720,253*	*1,720,253*	*1,720,253*	*DAC = E + F + G + H + I + J + K*
Indirect Annual Costs				
Overhead	13,206	13,206	13,206	L = 0.60 × (E + F + G + H)
Administrative Charges	60,107	60,107	60,107	M = 0.02 × TCI
Property Tax	30,054	30,054	30,054	N = 0.01 × TCI
Insurance	30,054	30,054	30,054	O = 0.01 × TCI
Capital Recovery[3]	427,894	427,894	427,894	P
Total Indirect Annual Costs	*561,314*	*561,314*	*561,314*	*IDAC = L + M + N + O + P*
Total Annual Cost ($)	**2,281,567**	**2,281,567**	**2,281,567**	*TAC = DAC + IDAC*
Pollutant Removed (tpy)	56.69	94.48	94.48	
Cost per ton of Pollutant Removed ($)	**40,247**	**24,148**	**24,148**	*$/ton = TAC / Pollutant Removed*

1. EPA Air Pollution Control Cost Manual (6th Edition), January 2002, Section 3.2, Chapter 2.
2. Capital Costs are based the EPA CATC Regenerative Incinerator Fact Sheet (EPA-452/F-03-021) average $/scfm capital cost, scaled from 2002 $ to 2016 $.

Minimum RTO cost	35	35
Conversion from 2002 to January 2016 dollars	1.32	1.32
Minimum RTO cost	46.09	46.09

3. Capital Recovery calculated based on Equations 2.54 and 2.55 of EPA Manual, Section 4.2, Chapter 2, pages 2-48 and 2-49.