Prevention of Significant Air Quality Deterioration Review

Preliminary Determination

June 18, 2008

Facility Name: Packaging Corporation of America Inc.
City: Clyattville
County: Lowndes
AIRS Number: 04-13-18500001
Application Number: 17736
Date Application Received: October 17, 2007

Review Conducted by:
State of Georgia - Department of Natural Resources
Environmental Protection Division - Air Protection Branch
Stationary Source Permitting Program

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SUMMARY

The Environmental Protection Division (EPD) has reviewed the application submitted by Packaging Corporation of America, Inc. (PCA) for a permit of construction and operation of a new No. 4 Recovery Furnace and a new No. 4 Smelt Dissolving Tank. PCA is proposing to install a recovery furnace and associated smelt dissolving tank (proposed No. 4 Recovery Furnace and No. 4 Smelt Dissolving Tank). PCA will also shut down the existing No. 1 and No. 2 Recovery Furnaces and associated smelt dissolving tanks and black liquor oxidation system (BLOX), use existing No. 3 Recovery Furnace and the C.E. Power Boiler as back-up boilers, and shut down the No. 3 Smelt Dissolving Tank.

The proposed project will result in a net increase in emissions of NO_x and H_2SO_4 from the facility and net reductions in PM, PM_{10}, VOC, CO, SO_2 and TRS. The source of the increase in emissions include the No. 4 Recovery Furnace and the No. 4 Smelt Dissolving Tank.

The modifications of the PCA Valdosta Mill due to this project will result in an emissions increase in NO_x and H_2SO_4. A Prevention of Significant Deterioration (PSD) analysis was performed for the facility for all PSD regulated pollutants to determine if any net emissions increase was above the "significance" levels. The CO, VOC, NO_x, SO_2, TRS, PM, PM_{10} and H_2SO_4 project emissions increases were above the PSD significant level threshold. However after decreases due to the removed equipment and contemporaneous decreases a full PSD review is only required for NO_x and H_2SO_4.

The Packaging Corporation of America, Inc. is located in Lowndes County, which is classified as "attainment" or "unclassifiable" for SO_2, $PM_{2.5}$ and PM_{10}, NO_X, CO, and ozone (VOC).

The EPD review of the data submitted by Packaging Corporation of America Inc. related to the proposed modifications indicates that the project will be in compliance with all applicable state and federal air quality regulations.

It is the preliminary determination of the EPD that the proposal provides for the application of Best Available Control Technology (BACT) for the control of NO_x, and H_2SO_4, as required by federal PSD regulation 40 CFR 52.21(j).

It has been determined through approved modeling techniques that the estimated emissions will not cause or contribute to a violation of any ambient air standard or allowable PSD increment in the area surrounding the facility or in Class I areas located within 200 km of the facility. It has further been determined that the proposal will not cause impairment of visibility or detrimental effects on soils or vegetation. Any air quality impacts produced by project-related growth should be inconsequential.

This Preliminary Determination concludes that an Air Quality Permit should be issued to Packaging Corporation of America Inc. (PCA) for the requested modifications. PCA is proposing to install a recovery furnace and associated smelt dissolving tank (proposed No. 4 Recovery Furnace and The No. 4 Smelt Dissolving Tank). PCA will also shut down the existing No. 1 and No. 2 Recovery Furnaces and associated smelt dissolving tanks and black liquor oxidation system (BLOX), use modified No. 3 Recovery Furnace to be used in conjunction with the C.E. Power Boiler as back-up boilers, and shut down the No. 3 Smelt Dissolving Tank. Various conditions have been incorporated into the current Title V operating permit to provide reasonable assurance of compliance with all applicable air quality regulations. A copy of the draft permit amendment is included in Appendix A. This Preliminary Determination also acts as a narrative for the Title V Permit.

1.0 INTRODUCTION – FACILITY INFORMATION AND EMISSIONS DATA

On October 17, 2007, Packaging Corporation of America, Inc. (hereafter PCA) submitted an application for an air quality permit. PCA is proposing to install a recovery furnace and associated smelt dissolving tank (proposed No. 4 Recovery Furnace and No. 4 Smelt Dissolving Tank). PCA will also shut down the existing No. 1 and No. 2 Recovery Furnaces and associated smelt dissolving tanks and black liquor oxidation system (BLOX), use modified No. 3 Recovery Furnace to be used in conjunction with the C.E. Power Boiler as back-up boilers, and shut down the No. 3 Smelt Dissolving Tank. The facility is located at 5495 Lake Park-Clayttville Road in Clyattville, Lowndes County.

Table 1-1: Title V Major Source Status

Pollutant	Is the Pollutant Emitted?	If emitted, what is the facility's Title V status for the Pollutant?		
		Major Source Status	Major Source Requesting SM Status	Non-Major Source Status
PM	Y	✓		
PM_{10}	Y	✓		
SO_2	Y	✓		
VOC	Y	✓		
NO_x	Y	✓		
CO	Y	✓		
TRS	Y	✓		
H_2S	Y	✓		
Individual HAP	Y	✓		
Total HAPs	Y	✓		

Table 1-2 below lists all current Title V permits, all amendments, 502(b)(10) changes, and off-permit changes, issued to the facility, based on a review of the "Permit" file(s) on the facility found in the Air Branch office.

Table 1-2: List of Current Permits, Amendments, and Off-Permit Changes

Permit Number and/or Off-Permit Change	Date of Issuance/ Effectiveness	Purpose of Issuance
2631-185-0001-V-01-0	July 16, 2002	Initial Title V Operating Permit
"Off Permit Change"	July 22, 2005	Use of tall oil as fuel in the combination boilers
2631-185-0001-V-01-6	August 31, 2005	No. 3 Brown Stock Washer and Paper Machine Modifications.
2631-185-0001-V-01-7*	May 10, 2006	Installation of a pin chip silo and accompanying baghouse.
2631-185-0001-V-01-8*	April 18, 2007	Permit to construct new Woodyard operations.
"Off Permit Change"	September 8, 2007	Replace the grate in the Riley Combination Boiler with an in-kind
2631-185-0001-V-01-A	March 4, 2008	Addition of SO2 limit – EPA's Regional Haze Rule (40 CFR 51.308)

Note: Permits 2631-185-0001-V-01-1 through 2631-185-0001-V-01-5 were revoked and incorporated into 2631-185-0001-V-01-6.

* 502(b)10 that resulted in permit amendment

Based on the proposed project description and data provided in the permit application, the estimated incremental increases of regulated pollutants from the facility are listed in Table 1-3 below:

Table 1-3: Total Net Emissions Increases for the Project

Pollutant	Baseline Years	Potential Emissions Increase (tpy)	PSD Significant Emission Rate (tpy)	Subject to PSD Review
PM	April 1, 2004 to March 31, 2006	-4.6	25	No
PM_{10}	April 1, 2004 to March 31, 2006	-22.3	15	No
VOC	April 1, 2004 to March 31, 2006	-2.4	40	No
NO_X	April 1, 2004 to March 31, 2006	283.7	40	Yes
CO	April 1, 2004 to March 31, 2006	-1600.1	100	No
SO_2	April 1, 2004 to March 31, 2006	-231.5	40	No
TRS	April 1, 2004 to March 31, 2006	-18.3	10	No
Pb		1.15×10^{-3}	0.6	No
Fluorides		0	3	No
H_2S	April 1, 2004 to March 31, 2006	0	10	No
SAM	April 1, 2004 to March 31, 2006	12.3	7	Yes

The definition of baseline actual emissions is the average emission rate, in tons per year, at which the emission unit actually emitted the pollutant during any consecutive 24-month period selected by the facility within the 10-year period immediately proceeding the date a complete permit application was received by EPD. The net increases were calculated by subtracting the past actual emissions (based upon the annual average emissions from April 1, 2004 to March 31, 2006) from the future projected actual emissions of the No. 4 Recovery Boiler, No. 4 Smelt Dissolving Tank, C.E. Power Boiler and RB3 Power Boiler and associated emission increases from non-modified equipment. Table 1-4 details this emissions summary. The emissions calculations for Tables 1-3 and 1-4 can be found in detail in the facility's PSD application (Application No. 17736). These calculations have been reviewed and approved by the Division.

Table 1-4: Net Change in Emissions Due to the Major PSD Modification

Pollutant	Increase from Modified equipment		Associated Units Increase (tpy)	Total Increase (tpy)
	Past Actual	Future Actual		
PM/PM_{10}	351	243.11	81.1	-26.79
VOC	117.5	113.9	1.3	-2.3
NO_X	428.4	641.9	70.2	283.7
CO	2722.1	1760	-638.2	-1600.3
SO_2	1251.6	748.5	271.5	-231.6
TRS	45	26.6	0	-18.4
Pb	0.0081	0.009253	0	0.001153
Fluorides	-	-	-	-
H_2S	-	-	-	-
SAM	13.2	21.3	4.2	12.3

Based on the information presented in Tables 1-3 and 1-4 above, PCA's proposed modification, as specified per Georgia Air Quality Application No. 17736, is classified as a major modification under PSD

because of the net emissions increases of NO_x and H_2SO_4 (H_2SO_4 equivalent to SAM, Sulfuric Acid Mist).

Through its new source review procedure, EPD has evaluated PCA's proposal for compliance with State and Federal requirements. The findings of EPD have been assembled in this Preliminary Determination.

2.0 PROCESS DESCRIPTION

According to Application No. 17736, PCA has proposed to replace the three existing Direct Contact Evaporator (DCE) recovery furnaces, the associated smelt dissolving tanks, and the BLOX system with a new non-direct contact evaporator (NDCE) recovery furnace (No. 4 Recovery Furnace), new smelt dissolving tank (No. 4 Smelt Dissolving Tank) and a high solids crystallizer to increase the multiple effect evaporator (MEE) output from about 45% dry solids to about 75% dry solids, after which the existing recovery furnaces and associated smelt dissolving tanks will be shut down except for the No. 3 Recovery Furnace. The No. 3 Recovery Furnace will be transitioned to a back-up power boiler, firing natural gas only. The multiple effect evaporator is subject to 40 CFR 60 Subpart BB and 40 CFR 63 Subpart S requirements. The recovery furnaces and smelt dissolving tanks are affected units under 40 CFR 63 Subpart MM. The No. 4 Recovery Furnace and No. 4 Smelt Dissolving Tank will be new units under Subpart MM, subject to more stringent requirements than the existing units they will replace, as well as being subject to the NSPS standards in 40 CFR 60 Subpart BB. The No. 4 Recovery Furnace will also be subject to 40 CFR 60 Subpart Db when firing natural gas.

The PCA permit application and supporting documentation are included in Appendix A of this Preliminary Determination and can be found online at www.georgiaair.org/airpermit.

3.0 REVIEW OF APPLICABLE RULES AND REGULATIONS

State Rules

Georgia Rule for Air Quality Control (Georgia Rule) 391-3-1-.03(1) requires that any person prior to beginning the construction or modification of any facility which may result in an increase in air pollution shall obtain a permit for the construction or modification of such facility from the Director upon a determination by the Director that the facility can reasonably be expected to comply with all the provisions of the Act and the rules and regulations promulgated there under. Georgia Rule 391-3-1-.03(8)(b) continues that no permit to construct a new stationary source or modify an existing stationary source shall be issued unless such proposed source meets all the requirements for review and for obtaining a permit prescribed in Title I, Part C of the Federal Act [i.e., Prevention of Significant Deterioration of Air Quality (PSD)], and Section 391-3-1-.02(7) of the Georgia Rules (i.e., PSD).

No. 4 Recovery Furnace is subject to the following Georgia Air Quality Rules, all of which exist in the current permit:

Applicable Georgia Rule	Pollutant (Averaging Period)	Emission Limit	Description
391-3-1-.02(2)(b) Visible Emissions	Opacity	40%	Subsumed by 40 CFR 63 Subpart MM
40 CFR 60 Subpart BB is more stringent than 391-3-1-.02(2)(gg) Kraft Pulp Mills	TRS	5 ppmdv@8% O_2	Condition 3.3.39
391-3-1-.02(2)(e) Particulate Emissions from Manufacturing Processes	PM	$E = 0.55P^{0.11} - 40$, where E = emission rate in pounds per hour and P = process input weight rate in tons per hour.	Condition 3.4.24

No. 4 Smelt Dissolving Tank is subject to the following Georgia Air Quality Rules, all of which exists in the current permit:

Applicable Georgia Rule	Pollutant (Averaging Period)	Emission Limit	Description
391-3-1-.02(2)(b) Visible Emissions	Opacity	40%	Condition 3.4.25
391-3-1-.02(2)(gg) Kraft Pulp Mills	TRS (24-hour averaging)	0.0168 lbs per ton BLS	Condition 3.4.26
391-3-1-.02(2)(e) Particulate Emissions from Manufacturing Processes	PM	$E = 0.55P^{0.11} - 40$, where E = emission rate in pounds per hour and P = process input weight rate in tons per hour.	Condition 3.4.27

RB3 Power Boiler is subject to the following Georgia Air Quality Rules, all of which exist in the current permit:

Applicable Georgia Rule	Pollutant (Averaging Period)	Emission Limit	Description
391-3-1-.02(2)(d)(3) Fuel-burning Equipment	Opacity	20% for one six minute period per hour of not more than 27%	Condition 3.4.28
391-3-1-.02(2)(d)1(ii) Fuel-burning Equipment	PM	$P = 0.7(10/R)^{0.202}$ pounds per MMBtu heat input P = allowable weight of fly/ash and/or PM in lbs/MMBtu R = heat input MMBtu/hr	Condition 3.4.29

Federal Rule - PSD

The regulations for PSD in 40 CFR 52.21 require that any new major source or modification of an existing major source be reviewed to determine the potential emissions of all pollutants subject to regulations under the Clean Air Act. The PSD review requirements apply to any new or modified source which belongs to one of 28 specific source categories having potential emissions of 100 tons per year or more of any regulated pollutant, or to all other sources having potential emissions of 250 tons per year or more of any regulated pollutant. They also apply to any modification of a major stationary source which results in a significant net emission increase of any regulated pollutant.

Georgia has adopted a regulatory program for PSD permits, which the Unites States Environmental Protection Agency (EPA) has approved as part of Georgia's State Implementation Plan (SIP). This regulatory program is located in the Georgia Rules at 391-3-1-.02(7). This means that Georgia EPD issues PSD permits for new major sources pursuant to the requirements of Georgia's regulations. It also means that Georgia EPD considers, but is not legally bound to accept, EPA comments or guidance. A commonly used source of EPA guidance on PSD permitting is EPA's Draft October 1990 New Source Review Workshop Manual for Prevention of Significant Deterioration and Nonattainment Area Permitting (NSR Workshop Manual). The NSR Workshop Manual is a comprehensive guidance document on the entire PSD permitting process.

The PSD regulations require that any major stationary source or major modification subject to the regulations meet the following requirements:

- Application of BACT for each regulated pollutant for which there was a net increase in emissions of a significant amount;
- Analysis of the ambient air impact;
- Analysis of the impact on soils, vegetation, and visibility;
- Analysis of the impact on Class I areas; and
- Public notification of the proposed plant in a newspaper of general circulation

Definition of BACT

The PSD regulation requires that BACT be applied to all regulated air pollutants emitted in significant amounts. Section 169 of the Clean Air Act defines BACT as an emission limitation reflecting the maximum degree of reduction that the permitting authority (in this case, EPD), on a case-by-case basis,

taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such a facility through application of production processes and available methods, systems, and techniques. In all cases BACT must establish emission limitations or specific design characteristics at least as stringent as applicable New Source Performance Standards (NSPS). In addition, if EPD determines that there is no economically reasonable or technologically feasible way to measure the emissions, and hence to impose and enforceable emissions standard, it may require the source to use a design, equipment, work practice or operations standard or combination thereof, to reduce emissions of the pollutant to the maximum extent practicable.

EPA's NSR Workshop Manual includes guidance on the 5-step top-down process for determining BACT. In general, Georgia EPD requires PSD permit applicants to use the top-down process in the BACT analysis, which EPD reviews. The five steps of a top-down BACT review procedure identified by EPA per BACT guidelines are listed below:

Step 1: Identification of all control technologies;
Step 2: Elimination of technically infeasible options;
Step 3: Ranking of remaining control technologies by control effectiveness;
Step 4: Evaluation of the most effective controls and documentation of results; and
Step 5: Selection of BACT.

The following is a discussion of the applicable federal rules and regulations pertaining to the equipment that is the subject of this preliminary determination, which is then followed by the top-down BACT analysis.

New Source Performance Standards

No. 4 Recovery Furnace is subject to the following US EPA federal regulations:

Applicable Rule	Pollutant (Averaging Period)	Emission Limit	Description
40 CFR 60.282(a)(1)(ii) Standards of Performance for Kraft Pulp Mills	Opacity (6-minute)	<=35%	Condition 3.3.40
40 CFR 60.283(a)(2) Standards of Performance for Kraft Pulp Mills is more stringent that 391-3-1-.02(2)(gg).	TRS (12-hour average)	5 ppmdv @ 8% O_2	Condition 3.3.39
40 CFR 60.44(b)(c) Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction Is Commenced After August 17, 1971	PM	Natural Gas limited to 872 $MMft^3$/rolling 12-month period	1,025 Btu/ft^3 of Natural Gas (Energy to Volumetric fuel conversion factor)

No. 4 Smelt Dissolving Tank

Applicable Rule	Pollutant (Averaging Period)	Emission Limit	Description
40 CFR 60.283(a)(4) Standards of Performance for Kraft Pulp Mills	TRS	0.033 lb/ton BLS	Subsumed by 391-3-1-.02(2)(gg) Kraft Pulp Mills, Condition 3.4.27

National Emissions Standards For Hazardous Air Pollutants

No. 4 Recovery Furnace is subject to the following US EPA federal regulations:

Applicable Rule	Pollutant (Averaging Period)	Emission Limit	Description
40 CFR 63.862(b)(1) Combustion Sources at Kraft, Soda and Sulfite Pulp and Paper Mills	PM	0.034 g/dscm (0.015 gr/dscf) corrected to 8% O_2	Condition 3.3.28
40 CFR 60.282(a)(1)(ii) Standards of Performance for Kraft Pulp Mills	Opacity	</= 35%	Condition 3.3.40
40 CFR 63.862(c)(1) Combustion Sources at Kraft, Soda and Sulfite Pulp and Paper Mills	Gaseous organic HAP	</=0.012kg/Mg (0.025 lbs/ton) BLS	Condition 3.3.41

No. 4 Smelt Dissolving Tank

Applicable Rule	Pollutant (Averaging Period)	Emission Limit	Description
40 CFR 63.862(b)(1) Combustion Sources at Kraft, Soda and Sulfite Pulp and Paper Mills	PM	0.06 kg/Mg (0.12 lbs/ton BLS)	Condition 3.3.28

State and Federal – Startup and Shutdown and Excess Emissions

Excess emission provisions for startup, shutdown, and malfunction are provided in Georgia Rule 391-3-1-.02(2)(a)7. Excess emissions from the No. 4 Recovery Furnace and No. 4 Smelt Dissolving Tank associated with the proposed project would most likely result from a malfunction of the associated control equipment. The facility cannot anticipate or predict malfunctions. However, the facility is required to minimize emissions during periods of startup, shutdown, and malfunction.

Federal Rule – 40 CFR 64 – Compliance Assurance Monitoring

Under 40 CFR 64, the *Compliance Assurance Monitoring* Regulations (CAM), facilities are required to prepare and submit monitoring plans for applicable emission units with the Title V application. The CAM Plans provide an on-going and reasonable assurance of compliance with emission limits. Under the general applicability criteria, this regulation applies to units that use a control device to achieve compliance with an emission limit and whose pre-controlled emissions levels exceed the major source thresholds under the Title V permitting program. Although other units may potentially be subject to CAM upon renewal of the Title V operating permit, such units are not being modified under the proposed project and need not be considered for CAM applicability at this time.

Therefore, this applicability evaluation only addresses the PM from No. 4 Recovery Furnace as regulated pursuant to 40 CFR 63 Subpart MM and therefore exempt from the CAM plan requirements.

4.0 CONTROL TECHNOLOGY REVIEW

The proposed project will result in emissions that are significant enough to trigger PSD review for the following pollutants: NO_x and H_2SO_4.

No. 4 Recovery Furnace- Background

The No. 4 Recovery Furnace (Source Code 7040) is an Andritz non-direct contact evaporator (NDCE) furnace with a black liquor solids (BLS) capacity of 3.76 MMlbs/day, as-fired, (7.5% is recycled solids). No. 4 Recovery Furnace would burn primarily BLS, while natural gas would be available for use during start-up and shut down procedures and unexpected operational upsets.

No. 4 Recovery Furnace – NO_x Emissions

Applicant's Proposal

NO_x is a product of conventional combustion processes. Most of the NO_x emissions from a recovery furnace is attributed to fuel resulting from the partial oxidation of the black liquor nitrogen content. Controlling the combustion process is a well-demonstrated NO_x control method for stationary combustion sources. Based on the reasons presented in PSD Permit No. 17736 PCA identified good operating practices and combustion control as the only technically feasible control technology for NO_x emissions.

EPD Review – NO_x Control

PCA conducted a NO_x BACT analysis which was reviewed by the Division. PCA has identified good operating practices and combustion control as the only technically feasible control technology. The required control technology relates to proper design, operation and control of the recovery furnace combustion process. The lowest NO_x emission limit identified as BACT in the RBLC for a project that has been constructed and demonstrated compliance with the emission limits since 1990 is 75 ppmdv @ 8% O_2. PCA confirmed that projects with RBLC listed emission limits below 75 ppmdv @ 8% O_2 have not been constructed. PCA proposes a NO_x emission limit of 75 ppmdv @ 8% O_2 and standard conditions achieved through overall good combustion practices and the use of tertiary air from the No. 4 Smelt Dissolving Tank. This proposed emission limit represents the most stringent emission limit listed in the RBLC for similar emission units.

Conclusion – NO_x Control

Initial performance is required in order to meet this BACT limit. The BACT selection for NO_x from the No. 4 Recovery Furnace is summarized below in Table 4-1:

Table 4-1: BACT Summary for the No. 4 Recovery Furnace

Pollutant	Control Technology	Proposed BACT Limit	Averaging Time	Compliance Determination Method
NOx	Good Combustion Practices	75 ppmdv @8% O_2		Performance Testing and Good Combustion Practices

No. 4 Recovery Furnace – H_2SO_4 Emissions

Applicant's Proposal

PCA conducted a H_2SO_4 BACT analysis submitted with PSD Application 17736 and after reviewing the most recent emission limits identified in the U.S. EPA RBLC and found only one example of a recovery furnace permitted in 1997. Therefore, PCA proposes good combustion practices as a BACT level of control and no specific numeric emission limit.

EPD Review – H_2SO_4 Control

Sulfuric acid (H_2SO_4), also referred to as Sulfuric Acid Mist (SAM), is a PSD pollutant for which the net emissions increase for this project , including the contemporaneous period, exceeds the Prevention of Significant Deterioration (PSD) significance threshold of 7 tons per year (tpy).

There is no identified or established control technology for SAM emissions from kraft non-direct contact evaporator (NDCE) recovery furnaces other than good combustion control. The latter has been cited as the control method for all the Best Available Control Technology (BACT) determinations for SAM in the RACT/BACT/LAER Clearinghouse (RBLC) for kraft NDCE recovery furnaces for the last 10 years. Not all the NDCE units in the Clearinghouse have SAM limits, but for those that do, the SAM limits are most often expressed in units that are not directly transferable to other units, such as pound/hour values without adequate information on firing rates or other unit-specific conditions to convert to a standardized pound per ton of black liquor solids (BLS) emission limit.

The National Council for Air and Stream Improvement (NCASI) has done work on measuring SAM emissions at pulp and paper sources, and has developed a test method that has been used in the industry to develop the SAM emissions data that are most widely available. As part of this work, NCASI also developed test data for NDCE recovery furnaces for six sources. This NDCE data has a mean value of 0.0285 lb/ton BLS fired.

SAM emissions correlate to some degree with sulfur dioxide (SO_2) emissions. PCA's projected SO_2 emissions level (75 ppm), while not subject to PSD-BACT, is equivalent to several SO_2 BACT emissions limits for similar units. PCA attempted to estimate SAM by correlating the very limited NCASI data on the relationship between SO_2 and SAM emissions with PCA's proposed SO_2 emissions. This effort indicated that the SAM emissions values for the PCA unit could be greater than the NCASI mean value.

Review of the RBLC indicated that a value of 0.0285 lb/ton BLS was listed in one PSD permit issued in 1997, but it has not been verified in the RBLC as having been demonstrated. A more recent PSD permit for a NDCE recovery furnace was issued in 2004 for the Rock-Tenn Company's Mill in Demopolis, AL. (RBLC ID No. AL-0222). The Rock-Tenn limit is 0.042 lb/ton BLS, and compliance with this limit is listed as verified in the Clearinghouse. This value is lower than the value of the NCASI mean value plus 1 S.D (standard deviation). The PCA recovery furnace vendor has indicated that this lower value would be achievable on the unit being installed at the PCA Valdosta Mill.

PCA has already proposed that the established BACT method of control is good combustion control practices. In addition, PCA now proposes a BACT limit, based on the 2004 PSD-BACT limit issued for a similar unit at the Rock-Tenn Mill, of 0.042 lb/ton BLS. Please note the results of the Project Y PSD applicability evaluation and the air quality modeling evaluation are based upon a 0.042 lb/ton BLS SAM emission rate from the proposed recovery furnace. Therefore, this proposed BACT emission limit does not require any revisions to the existing PSD permit application.

Conclusion – H_2SO_4 Control

PCA conducted a H_2SO_4 BACT analysis submitted with PSD Application 17736 and PCA proposed good combustion practices as a BACT level of control, which is the control technology identified in the RBLC, and proposed no specific numeric emission limit. Subsequent to the initial application, PCA has identified and reviewed additional RBLC information for H_2SO_4 and has submitted supplemental information to establish a BACT limit for H_2SO_4, of 0.042 lb/ton BLS as measured by U.S. EPA Conditional Method CTM-013 (based on the NCASI test method in NCASI Technical Bulletin 106). This is consistent with the a 1997 RBLC entry (RBLC ID AL-0116) and also with a 2004 RBLC entry for a unit of similar size (RBLC ID AL-0222). The BACT selection for the No. 4 Recovery Furnace is summarized below in Table 4-2. Initial performance is required in order to meet this BACT limit.

Table 4-2: BACT Summary for the No. 4 Recovery Furnace

Pollutant	Control Technology	Proposed BACT Limit	Averaging Time	Compliance Determination Method
H_2SO_4	Good Combustion Practices	0.042 lb/ton BLS	3-hour average	Performance Testing and Good Combustion Practices

5.0 TESTING AND MONITORING REQUIREMENTS

Testing Requirements:

Performance testing is required for the No. 4 Recovery Furnace and the No. 4 Smelt Tank in order to establish compliance particulate matter (PM), TRS, H_2SO_4 and NO_x limits. Since the exhaust gases from the No. 4 Smelt Dissolving Tank are being conditioned by a scrubber and than vented to the No. 4 Recovery Furnace as tertiary process air, these units are being considered as one unit. Therefore there is no initial performance testing or continuous monitoring required for the No. 4 Smelt Dissolving Tank, only the No. 4 Recovery Furnace. Prior to the testing a TRS continuous emissions monitor system (CEMS) and continuous opacity monitor system (COMS) will be installed. The following tables outline what is required in the permit.

No. 4 Recovery Furnace

Pollutant - Testing Frequency	Permit Testing Condition	Permit Condition - Regulation
TRS - CEMS	4.2.19	Continuous Emissions Monitor System (CEMS) Certification
PM – annual/initial	4.2.20	3.3.28 - 40 CFR 63 Subpart MM
TRS – biennial/initial	4.2.21	3.3.39 – 40 CFR 60 Subpart BB
NOx – initial	4.2.22	3.3.42 – 40 CFR 52.21 – BACT Limit
H_22O_4 - initial	4.2.23	3.3.43 - 40 CFR 52.21 – BACT Limit

No. 4 Smelt Dissolving Tank

Pollutant	Permit Testing Condition	Permit Condition - Regulation
PM	None	No Permit condition, since the No. 4 Recovery is the control device for this emission unit
Opacity	None	No Permit condition, since the No. 4 Recovery is the control device for this emission unit
TRS	None	No Permit condition, since the No. 4 Recovery is the control device for this emission unit

RB3 Power Boiler

Pollutant - Testing Frequency	Permit Testing Condition	Permit Condition - Regulation
Opacity – initial	4.2.26	3.4.29 - 391-3-1-.02(2)(d)3
PM - initial	4.2.27	3.4.30 - 391-3-1-.02(2)(d)1(ii)

Monitoring Requirements:

TRS concentration on a dry basis and specified percent oxygen by volume will be monitored from the No. 4 Recovery Furnace. Opacity from the No. 4 Recovery Furnace will also be monitored.

Pollutant	Permit Monitoring Condition	Regulation
TRS	5.2.1.a	391-3-1-.02(2)(gg)1(i)(II) 391-3-1-.02(6)(b)1
Opacity	5.2.1.c	40 CFR 63 Subpart BB 40 CFR 70.6 391-3-1-.02(6)(b)1
PM	5.2.3.d.i	391-3-1-.02(2)(6)1 40 CFR 70.6

CAM Applicability:

The No. 4 Recovery Furnace is subject to the requirements of compliance assurance monitoring (CAM) as specified in 40 CFR 64. CAM is only applicable to emission units that have potential emissions greater than the major source threshold, located at a major source, that use a control device to control a pollutant emitted in an amount greater than the major source threshold for that pollutant, and have a specific emission standard for that pollutant. The No. 4 Recovery Furnace uses an ESP to control PM and is subject to the PM emission standards provided in 40 CFR 63, Subpart MM. The basis for a CAM submittal is a significant modification to large PSEU's. However it is not subject to CAM plan due to its being subject to 40 CFR 63 MM. Since the No. 4 Recovery Furnace is subject to 40 CFR 63, Subpart MM monitoring requirements for PM and this is the most restrictive PM limitation, and 40 CFR 63, Subpart MM is a post 1990 MACT standard, a separate CAM plan is not required for PM emissions from the No. 4 Recovery Furnace.

6.0 AMBIENT AIR QUALITY REVIEW

An air quality analysis is required to determine the ambient impacts associated with the construction and operation of the proposed modifications. The main purpose of the air quality analysis is to demonstrate that emissions emitted from the proposed modifications, in conjunction with other applicable emissions from existing sources (including secondary emissions from growth associated with the new project), will not cause or contribute to a violation of any applicable National Ambient Air Quality Standard (NAAQS) or PSD increment in a Class I or Class II area. NAAQS exist for NO_2, CO, $PM_{2.5}$, PM_{10}, SO_2, Ozone (O_3), and lead. PSD increments exist for SO_2, NO_2, and PM_{10}.

The proposed project at PCA triggers an air quality analysis for NO_2 and H_2SO_4. An air quality analysis was conducted to demonstrate the facility's compliance with the NAAQS and PSD Increment standards for NO_x. An additional analysis was conducted to demonstrate compliance with the Georgia air toxics program. This section of the application discusses the air quality analysis requirements, methodologies, and results. Supporting documentation may be found in the Air Quality Dispersion Report of the application and in the additional information packages.

Modeling Requirements

The air quality modeling analysis was conducted in accordance with Appendix W of Title 40 of the Code of Federal Regulations (CFR) §51, *Guideline on Air Quality Models*, and Georgia EPD's *Guideline for Ambient Impact Assessment of Toxic Air Pollutant Emissions (Revised)*. The proposed project will cause a significant net emissions increase of NO_X and H_2SO_4

Significance Analysis: Ambient Monitoring Requirements and Source Inventories
Initially, a Significance Analysis is conducted to determine if the project related emissions increases of PSD significant pollutants would significantly impact the area surrounding the facility. Maximum ground-level concentrations are compared to the pollutant-specific U.S. EPA-established significant impact level (SIL). The SIL for the pollutants of concern are summarized in Table 6-1. There is no SIL established for H_2SO_4.

If a significant impact (i.e., an ambient impact above the SIL) does not result, no further modeling analyses would be conducted for that pollutant for NAAQS or PSD Increment. If a significant impact does result, further refined modeling would be completed to demonstrate that the proposed project would not cause or contribute to a violation of the NAAQS or consume more than the available Class II PSD Increment.

Under current U.S. EPA policies, the maximum impacts due to the emissions increases from a project are also assessed against monitoring *de minimis* levels to determine whether pre-construction monitoring should be considered. These monitoring *de minimis* levels are also listed in Table 6-1. If either the predicted modeled impact from an emission increase or the existing ambient concentration is less than the monitoring *de minimis* concentration, the permitting agency has the discretionary authority to exempt an applicant from pre-construction ambient monitoring. This evaluation is required for all PSD significant pollutants for which a SIL has been established.

If any off-site pollutant impacts calculated in the Significance Analysis exceed the SIL, a Significant Impact Area (SIA) would be determined. The SIA encompasses a circle centered on the facility with a radius extending out to (1) the farthest location where the emissions increase of a pollutant from the project causes a significant ambient impact, or (2) a distance of 50 km, whichever is less. All sources within a distance of 50 km of the edge of a SIA are assumed to potentially contribute to ground-level concentrations within the SIA and would be evaluated for possible inclusion in the NAAQS and PSD Increment analyses.

Table 6-1: Summary of Modeling Significance Levels

Pollutant	Averaging Period	PSD Significant Impact Level (ug/m^3)	PSD Monitoring Deminimis Concentration (ug/m^3)
NO_2	Annual	1	14

NAAQS Analysis

The primary NAAQS are the maximum concentration ceilings, measured in terms of total concentration of pollutant in the atmosphere, which define the "levels of air quality which the U.S. EPA judges are necessary, with an adequate margin of safety, to protect the public health." Secondary NAAQS define the levels that "protect the public welfare from any known or anticipated adverse effects of a pollutant." The primary and secondary NAAQS are listed in Table 6-2 below.

Table 6-2: Summary of National Ambient Air Quality Standards

Pollutant	Averaging Period	NAAQS	
		Primary / Secondary (ug/m^3)	Primary / Secondary (ppm)
NO_2	Annual	100 / 100	0.053 / 0.053

If the maximum pollutant impact calculated in the Significance Analysis exceeds the SIL at an off-property receptor, a NAAQS analysis is required. The NAAQS analysis would include the potential emissions from all emission units at PCA, except for units that are generally exempt from permitting requirements and are normally operated only in emergency situations. The emissions modeled for this analysis would reflect the results of the BACT analysis for the modified emission unit. Facility emissions would then be combined with the allowable emissions of sources included in the regional source inventory. The resulting impacts, added to appropriate background concentrations, would be assessed against the applicable NAAQS to demonstrate compliance. For an annual average NAAQS analysis, the highest modeled concentration among five consecutive years of meteorological data would be assessed, while the highest second-high impact would be assessed for the short-term averaging periods.

PSD Increment Analysis

The PSD Increments were established to "prevent deterioration" of air quality in certain areas of the country where air quality was better than the NAAQS. To achieve this goal, U.S. EPA established PSD Increments for certain pollutants. The sum of the PSD Increment concentration and a baseline concentration defines a "reduced" ambient standard, either lower than or equal to the NAAQS that must be met in an attainment area. Significant deterioration is said to have occurred if the change in emissions occurring since the baseline date results in an off-property impact greater than the PSD Increment (i.e., the increased emissions "consume" more that the available PSD Increment).

U.S. EPA has established PSD Increments for NO_2, SO_2, and PM_{10}; no increments have been established for CO or $PM_{2.5}$ (however, $PM_{2.5}$ increments are expected to be added soon). The PSD Increments are further broken into Class I, II, and III Increments. PCA is located in a Class II area. The PSD Increments are listed in Table 6-3.

Table 6-3: Summary of PSD Increments

Pollutant	Averaging Period	PSD Increment	
		Class I (ug/m^3)	Class II (ug/m^3)
NO_2	Annual	2.5	25

To demonstrate compliance with the PSD Increments, the increment-affecting emissions (i.e., all emissions increases or decreases after the appropriate baseline date) from the facility and those sources in the regional inventory would be modeled to demonstrate compliance with the PSD Class II Increment for any pollutant greater than the SIL in the Significance Analysis. For an annual average analysis, the highest incremental impact will be used. For a short-term average analysis, the highest second-high impact will be used.

The determination of whether an emissions change at a given source consumes or expands increment is based on the source classification (major or minor) and the time the change occurs in relation to baseline dates. The major source baseline date for NO_2 is February 8, 1988, and the major source baseline for SO_2 and PM_{10} is January 5, 1976. Emission changes at major sources that occur after the major source baseline dates affect Increment. In contrast, emission changes at minor sources only affect Increment after the minor source baseline date, which is set at the time when the first PSD application is completed in a given area, usually arranged on a county-by-county basis. The minor source baseline dates have been set for PM_{10} and SO_2 as January 30, 1980, and for NO_2 as April 12, 1991.

Modeling Methodology

Details on the dispersion model, including meteorological data, source data, and receptors can be found in EPD's PSD Dispersion Modeling and Air Toxics Assessment Review in Appendix C of this Preliminary Determination and in Section 7 of the permit application.

Modeling Results

Table 6-4 show that the proposed project will not cause ambient impacts of NO_2 above the appropriate SILs. Because the emissions increases from the proposed project result in ambient impacts less than the SILs, no further PSD analyses were conducted. Although no SIL exists for H_2SO_4, PCA modeled H_2SO_4 as part of the air toxics evaluation for the proposed project.

Table 6-4: Class II Significance Analysis Results – Comparison to SILs

Pollutant	Averaging Period	Year	UTM East (km)	UTM North (km)	Maximum Impact (ug/m^3)	SIL (ug/m^3)	Significant?
NO_2	Annual	0.7	280,056.7	3,397,512.8	0.55	1	**No**

*Data for worst year provided only. 2004

Ambient Monitoring Requirements

Table 6-5: Significance Analysis Results – Comparison to Monitoring *De Minimis* Levels

Pollutant	Averaging Period	Year*	UTM East (km)	UTM North (km)	Monitoring De Minimis Level (ug/m^3)	Modeled Maximum Impact (ug/m^3)	Significant?
NO_2	Annual	0.7	280,056.7	3,397,512.8	14	0.55	**No**

*Data for worst year provided only 2004

Table 6-5 shows that the proposed project will not cause ambient impacts of NO_2 above the appropriate monitoring de *minimus* levels. Although no monitoring de *minimus* level exists H_2SO_4 PCA modeled H_2SO_4 as part of the air toxics evaluation for the proposed project.

Increment Analysis

An increment expansion assessment for pre-PSD major source baseline was not submitted with the application. An increment expansion analysis was requested and facility could not provide this analysis. PCA informed the Division that all data available was already provided and that there was no more existing data to perform this analysis.

Class I Area Analysis

The Valdosta Mill is located within 300 km of five Class I areas. The sum of visibility-affecting pollutants due to the project is 74.4 tpy. The project and the contemporaneous period is 296 tpy. The closest Class I Area is to the Okeefenokee National Wildlife Refuge, at 73.1 km away from the Mill. This yields a Q/D ratio of 2.7 for the project, and a Q/D of 4.0 for the project and the contemporaneous period. This is less than the ratio value of 10 currently used by NPS for a detailed air quality analysis.

7.0 ADDITIONAL IMPACT ANALYSES

PSD requires an analysis of impairment to visibility, soils, and vegetation that will occur as a result of a modification to the facility and an analysis of the air quality impact projected for the area as a result of the general commercial, residential, and other growth associated with the proposed project.

Soils and Vegetation

Vegetation can be impacted from the emission of excessive amounts of common atmospheric pollutants such as sulfur dioxide, nitrogen oxides, carbon monoxide, carbon dioxide, hydrogen fluoride, ozone, hydrocarbons, particulates and metals (Malhotra and Khan, 1984). In general, however the main atmospheric pollutants that affect vegetation are nitrogen-based, sulfur-based, and ozone, with ozone causing more damage to plants than all other air pollutants combined (ARS, 1999). The sensitivity of vegetation to atmospheric pollution varies greatly with such factors as plant species and variety, climatic and seasonal conditions, soil composition, the concentration and duration of exposure, and the nature of combinations of pollutants (Treshow, 1984; Whitmore, 1985).

A summary of research on air pollution effects on vegetation divides air pollution injuries to plants into three general categories: acute, chronic, and subtle (Treshow, 1984). Acute injury is caused by exposure to a high concentration of a substance resulting in rapid visible death of some tissue. Chronic injury is caused by long-term exposure to low pollutant levels which gradually disrupts physiological processes and retards growth or yield (Hicks, 1978). The subtle effects of air pollution on vegetation are difficult to quantify since the threshold concentrations and exposure times that may cause subtle damage is difficult to define.

The low NO_X concentration predicted from the project (0.7 ug/m^3 on an annual basis) is very unlikely to result in damage to surrounding vegetation. This conclusion is supported by the fact that this concentration is less than the national ambient air quality standards (NAAQS) and data cited from "Diagnosing Vegetation Injury Caused by Air Pollutants" Applied Science Associates, Inc. 1978, which shows that even at continuous concentration levels of 500 µg/m^3, more than 1,000 hours of dose could occur without resulting damage to vegetation.

Growth

The proposed project is designed to reduce energy costs and to increase the operational flexibility of the Mill. No significant growth at the mill is expected due to the project. No additional employees will be required as a result of the changes. Furthermore, there is no anticipated increase in local industrial growth due to this project.

Visibility

Visibility impairment is any perceptible change in visibility (visual range, contrast, atmospheric color, etc.) from that which would have existed under natural conditions. Poor visibility is caused when fine solid or liquid particles, usually in the form of volatile organics, nitrogen oxides, or sulfur oxides, absorb or scatter light. This light scattering or absorption actually reduces the amount of light received from viewed objects and scatters ambient light in the line of sight. This scattered ambient light appears as haze.

Another form of visibility impairment in the form of plume blight occurs when particles and light-absorbing gases are confined to a single elevated haze layer or coherent plume. Plume blight, a white, gray, or brown plume clearly visible against a background sky or other dark object, usually can be traced to a single source such as a smoke stack.

Georgia's SIP and Georgia *Rules for Air Quality Control* provide no specific prohibitions against visibility impairment other than regulations limiting source opacity and protecting visibility at federally protected Class I areas. To otherwise demonstrate that visibility impairment will not result from continued operation of the mill, the VISCREEN model was used to assess potential impacts on ambient visibility at so-called "sensitive receptors" surrounding the facility. PCA performed a VISSCREEN analysis for the nearest Class I area (Okeefenokee), since it is the closest Class I area to the facility and demonstrated that the proposed project will not result in visibility impairment. PCA also demonstrated that the project will not result in visibility impairment at the nearby Valdosta Airport (Class II area). Since there is no ambient visibility protection standard for Class II areas, this analysis is presented for informational purposes only and predicted impacts in excess of screening criteria are not considered "adverse impacts" nor cause further refined analyses to be conducted.

The primary variables that affect whether a plume is visible or not at a certain location are (1) quantity of emissions, (2) types of emissions, (3) relative location of source and observer, and (4) the background visibility range. For this exhaust plume visibility analysis, a Level-1 visibility analysis was performed using the latest version of the EPA VISCREEN model according to the guidelines published in the *Workbook for Plume Visual Impact Screening and Analysis* (EPA-450/4-88-015). The VISCREEN model is designed specifically to determine whether a plume from a facility may be visible from a given vantage point. VISCREEN performs visibility calculations for two assumed plume- viewing backgrounds (horizon sky and a dark terrain object). The model assumes that the terrain object is perfectly black and located adjacent to the plume on the side of the centerline opposite the observer.

In the visibility analysis, the total project NO_X, PM_{10}, and H_2SO_4 emissions increases were modeled using the VISCREEN plume visibility model to determine the impacts. For both views inside and outside the Class I and Class II areas, calculations are performed by the model for the two assumed plume-viewing backgrounds. The VISCREEN model output shows separate tables for inside and outside the Class I and Class II areas. Each table contains several variables: theta, azi, distance, alpha, critical and actual plume delta E, and critical and actual plume contrast. These variables are defined as:

1. *Theta* – Scattering angle (the angle between direction solar radiation and the line of sight). If the observer is looking directly at the sun, theta equals zero degrees. If the observer is looking away from the sun, theta equals 180 degrees.

2. *Azi* – The azimuthal angle between the line connecting the observer and the line of sight.

3. *Alpha* – The vertical angle between the line of sight and the plume centerline.

4. *delta E* – Used to characterize the perceptibility of a plume on the basis of the color difference between the plume and a viewing background. A delta E of less than 2.0 signifies that the plume is not perceptible.

5. *Contrast* – The contrast at a given wavelength of two colored objects such as plume/sky or plume/terrain.

The analysis is generally considered satisfactory if *delta E* and *Contrast* are less than critical values of 2.0 and 0.05, respectively, both of which are Class I, not Class II, area thresholds. The Division has reviewed the VISCREEN results presented in the permit application and have determined that the visual impact criteria (*delta E* and *Contrast*) at the affected sensitive receptors are not exceeded as a result of the proposed project. Since the project passes the Level-1 analysis for the nearest Class I area and for the Class II area of interest, no further analysis of exhaust plume visibility is required as part of this air quality analysis.

Georgia Toxic Air Pollutant Modeling Analysis

Georgia EPD regulates the emissions of toxic air pollutant (TAP) emissions through a program covered by the provisions of *Georgia Rules for Air Quality Control*, 391-3-1-.02(2)(a)3.(ii). A TAP is defined as any substance that may have an adverse effect on public health, excluding any specific substance that is covered by a State or Federal ambient air quality standard. Procedures governing the Georgia EPD's review of TAP emissions as part of air permit reviews are contained in the agency's "*Guideline for Ambient Impact Assessment of Toxic Air Pollutant Emissions (Revised).*"

All air toxics evaluated by the applicant meet the applicable Georgia Air Toxics Guideline Acceptable Ambient Concentration (AACs). Since these impacts are not supposed to assess downwash effects, the ISCST3 model was used in review of the air toxics concentrations.

Selection of Toxic Air Pollutants for Modeling

For projects with quantifiable increases in TAP emissions, an air dispersion modeling analysis is generally performed to demonstrate that off-property impacts are less than the established Acceptable Ambient Concentration (AAC) values. The TAP evaluated are restricted to those that may increase due to the proposed project. Thus, the TAP analysis would generally be an assessment of off-property impacts due to facility-wide emissions of any TAP emitted by a facility. To conduct a facility-wide TAP impact evaluation for any pollutant that could conceivably be emitted by the facility is impractical. A literature review would suggest that at least one molecule of hundreds of organic and inorganic chemical compounds could be emitted from the various combustion units. This is understandable given the nature of the fuels fed to the combustion sources, and the fact that there are complex chemical reactions and combustion of fuel taking place in some. The vast majority of compounds potentially emitted however are emitted in only trace amounts that are not reasonably quantifiable.

For each TAP identified for further analysis, both the short-term and long-term AAC were calculated following the procedures given in Georgia EPD's *Guideline*. Figure 8-3 of Georgia EPD's *Guideline* contains a flow chart of the process for determining long-term and short-term ambient thresholds. PCA referenced the resources previously detailed to determine the long-term (i.e., annual average) and short-term AAC (i.e., 24-hour or 15-minute). The AACs were verified by the EPD.

Determination of Toxic Air Pollutant Impact

The Georgia EPD *Guideline* recommends a tiered approach to model TAP impacts, beginning with screening analyses using SCREEN3, followed by refined modeling, if necessary, with ISCST3 or ISCLT3. For the refined modeling completed, the infrastructure setup for the SIA analyses was relied upon with appropriate sources added for the TAP modeling. Note that per the Georgia EPD's *Guideline*, downwash was not considered in the TAP assessment.

Initial Screening Analysis Technique

Generally, an initial screening analysis is performed in which the total TAP emission rate is modeled from the stack with the lowest effective release height to obtain the maximum ground level concentration (MGLC). Note the MGLC could occur within the facility boundary for this evaluation method. The individual MGLC is obtained and compared to the smallest AAC. Due to the likelihood that this screening would result in the need for further analysis for most TAP, the analyses were initiated with the secondary screening technique.

8.0 EXPLANATION OF DRAFT PERMIT CONDITIONS

The permit requirements for this proposed facility are included in draft Permit Amendment No. 2631-185-0001-V-01-9.

Section 1.0: Facility Description

PCA is proposing to install a recovery furnace and associated smelt dissolving tank (proposed No. 4 Recovery Furnace and No. 4 Smelt Dissolving Tank (Source Codes 7040 and 7045). The No. 4 Smelt Dissolving Tank will vent through a scrubber and to the No. 4 Recovery Furnace as tertiary air during the combustion process. This process air will compose about 6% of the air needed for good combustion within the No. 4 Recovery Furnace. Due to the utilization of the No. 4 Smelt Dissolving Tank gases as process air there are no direct emissions from the No. 4 Smelt Dissolving Tank and therefore no specific monitoring or compliance demonstration is necessary beyond that which is required for the No. 4 Recovery Furnace. This does not exempt the No. 4 Smelt Dissolving Tank from meeting the emissions limits established for this system, but the No. 4 Recovery Furnace emissions limits are more stringent and therefore meets the emissions requirements for the No. 4 Smelt Dissolving Tank. There is a condition for emergency bypass of the No. 4 Recovery Furnace stack and reporting of these incidences.

PCA will also shut down the existing No. 1 and No. 2 Recovery Furnaces (Source Codes 7000 and 7010) and associated No. 1 and 2 Smelt Dissolving Tanks (Source Codes 7005 and 7010) and black liquor oxidation system (BLOX). The existing No. 3 Recovery Furnace and the C.E. Power Boiler will be used as back-up boilers and PCA will shut-down the No. 3 Smelt Dissolving Tank (Source Code 7015).

Section 2.0: Requirements Pertaining to the Entire Facility

Condition 2.1.2 is added to limit the sale of electricity to avoid additional NSPS requirements, 40 CFR 72.6(b)(4), 40 CFR 60 Subpart Da and 40 CFR 96 Subpart AA.

Section 3.0: Requirements for Emission Units

Section 3.3 Equipment Federal Rule Standards

The following emission units and associated control units are deleted from the Emission Units table. These units are being removed from the Facility or renamed:

- No. 1 and 2 Recovery Furnaces (Emission Unit ID Nos. 7000 and 7010)
- No. 1, 2 and 3 Smelt Dissolving Tanks (Emission Unit ID Nos. 7005, 7010 and 7015)
- Primary BLOX, Tank (Emission Unit ID No. 7032)
- Secondary BLOX Tank (Emission Unit ID No. 7033)
- No. 3 Recovery Furnace is being extensively modified to be utilized as a back-up power boiler and renamed the No.3 RB Power Boiler (Emission Unit ID No. 7020A).

The following conditions have been added or modified:

Condition 3.3.28 was modified to add the No. 4 Recovery Furnace and the No. 4 Smelt Dissolving Tank.

No. 4 Recovery Furnace and No. 4 Smelt Dissolving Tank

Condition 3.3.36 is added to ensure compliance with the requirements of 40 CFR 60 Subpart BB "Standards of Performance for Kraft Pulp Mills".

No. 4 Recovery Boiler

Condition 3.3.37 is added to ensure compliance with the requirements of 40 CFR 60 Subpart Db, "Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units".

Condition 3.3.38 is added to limit combustion of natural gas in No. 4 Recovery Furnace as a fraction of black liquor solids burned to incorporate the NOx requirements for 40 CFR 60 Subpart Db.

Condition 3.3.39 is added to limit the discharge of gases containing Total Reduced Sulfur (TRS) for the No. 4 Recovery Furnace to incorporate the requirements of 40 CFR 60 Subpart BB.

Condition 3.3.40 is added to limit opacity emissions from the No. 4 Recovery Furnace to incorporate the requirements of 40 CFR 60 Subpart BB.

Condition 3.3.41 is added to limit the HAP emission rate from the No. 4 Recovery Furnace to incorporate the requirements of 40 CFR 63 Subpart MM.

Condition 3.3.42 is added to limit NOx emissions from the No. 4 Recovery Furnace to incorporate the requirements of 40 CFR 52.21 – BACT Limit.

Condition 3.3.43 is added to limit H_2SO_4 emissions from the No. 4 Recovery Furnace to incorporate the requirements of 40 CFR 52.21 – BACT Limit.

Section 3.4 Equipment SIP Rule Standards

No. 4 Recovery Furnace

Condition 3.4.24 is added to include the No. 4 Recovery Furnace to incorporate the requirements of Georgia Rule 391-3-1-.02(2)(e)

No. 4 Smelt Dissolving Tank

Condition 3.4.25 is added to limit the percent opacity emission from the No. 4 Smelt Dissolving Tank to incorporate the requirements of Georgia Rule 391-3-1-.02(2)(b)(1).

Condition 3.4.26 is added to limit the emissions of TRS from the No. 4 Smelt Dissolving Tank to incorporate the requirements Georgia Rule 391-3-1-.02(2)(gg)1(iii) and 40 CFR 60.283(a)(4) subsumed.

Condition 3.4.27 is added to limit the discharge of particulate matter from the No. 4 Smelt Dissolving Tank to incorporate the requirements of Georgia Rule 391-3-1-.02(2)(e).

RB3 Power Boiler

Condition 3.4.28 is added to limit the percent opacity from the RB3 Power Boiler to incorporate Georgia Rule 391-3-1-.02(2)(d)(3).

Condition 3.4.29 is added to limit the emission rate of fly ash and/or particulate matter from the RB3 Power Boiler to incorporate Georgia Rule 391-3-1-.02(2)(d)1(ii).

Section 3.5 Equipment Standards Not Covered by a Federal or SIP Rule Not Instituted as an Emission Cap or Operating Limit

Condition 3.5.3 is added to describe the vent gases from the No. 4 Smelt Dissolving Tank as tertiary air into the No. 4 Recovery Furnace.

Condition 3.5.4 is added to limit RB3 Power Boiler to the combustion of natural gas only.

Condition 3.5.5.a is added to ensure the removal of the No. 1 and 2 Recover Furnaces, the No. 1, 2 and 3 Smelt Dissolving Tanks, and the BLOX System.

Condition 3.5.5.b is added to ensure the decommissioning of the No. 3 Recovery Furnace as a Kraft recovery furnace and transition to a power boiler.

Section 4.0: Requirements for Testing

Condition 4.1.3.y is added to include the appropriate test method for sulfuric acid emissions.

Conditions 4.2.1 and 4.2.2 requirements are modified to reflect the addition of the No. 4 Recovery Furnace.

Conditions 4.2.19 – 4.2.25 are added to include initial performance testing for PM, TRS, NO_x and H_2SO emissions from the No. 4 Recovery Furnace and the Opacity and PM emissions from the RB3 Power Boiler according to the Georgia SIP Rules, 40 CFR 60 Subpart BB, and 40 CFR 63 Subpart MM.

Section 5.0: Requirements for Monitoring

Condition 5.2.1.a.iii and Condition 5.2.1.c is added to include TRS emission and opacity CEMS monitoring from the No. 4 Recovery Furnace to incorporate 40 CFR 63 Subpart BB.

Condition 5.2.3.d.i is modified to add the No. 4 Recovery Furnace.

Section 6.0: Other Recordkeeping and Reporting Requirements

Section 6.1 General Record Keeping and Reporting Requirements

Excess Emissions

- Condition 6.1.7.a.i.(C) is added to include the No. 4 Recovery Furnace.

Exceedances

- Condition 6.1.7.b.vii is modified to add reference to Condition 6.1.7.b.vii(C) which is added because it relates to the No. 4 Recovery Furnaces.

Excursions

- Condition 6.1.7c.xv is added to include a No. 4 Recovery Furnace natural gas limitation.

Other Required Reporting

- Condition 6.1.7.d.x is added to report consecutive 6minute opacity averages greater then 20% for the No. 4 Recovery Furnace.

- Condition 6.1.7.d.xi is added to report any 4 hour period when the vent from the No. 4 Smelt Dissolving Tank is open to bypass the stack.
- Condition 6.1.7.d.xii is added to report all electricity sold to an electrical utility grid.

Section 6.2 Specific Record Keeping and Reporting Requirements

Condition 6.2.21.vii is modified add the No. 4 Recovery Furnace to the condition.

Condition 6.2.23.f and g is modified to add the No. 4 Recovery Furnace to the condition.

Condition 6.2.32 is added to require records for monthly natural gas use in the No. 4 Recovery Furnace to ensure compliance with permit condition 3.3.43.

Condition 6.2.33 is added to notify the Department start of construction, initial startup and advance notice of performance tests to incorporate requirements of 40 CFR 60.8.

Section 7.0: Other Specific Requirements

Section 7.14 Specific Conditions Associated with this Amendment

Condition 7.14.1 is added to include a condition that upon startup if the No. 4 Recovery Furnace and No. Smelt Dissolving Tank that the associated conditions in Section 3.0 become effective.

Condition 7.14.2 is added to included a condition that upon shutdown of the listed equipment the associated conditions become null and void.

APPENDIX A

Draft Revised Title V Operating Permit Amendment
Packaging Corporation of America Inc.
Clyattville (Lowndes County), Georgia

APPENDIX B

Packaging Corporation of America Inc.
PSD Permit Application and Supporting Data

Contents Include:

1. PSD Permit Application No. 17736, dated October 17, 2007
   Located on internet site http:///www.georgiaair.org/airpermit/
2. Additional Information Package

APPENDIX C

EPD'S PSD Dispersion Modeling and Air Toxics Assessment Review