Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Jeb Bush
Governor

Colleen M. Castille
Secretary

March 17, 2006

CERTIFIED MAIL - Return Receipt Requested

Mr. Christopher Read, Mill Manager
International Paper Company
Pensacola Mill
375 Muscogee Road
Cantonment, Florida 32533-0087

Re: International Paper Company - Pensacola Mill
Surrender of Permit No. 0330042-007-AC
Withdrawal of Air Permit Application No. 0330042-008-AC (PSD-FL-335)

Dear Mr. Read:

On November 15, 2005, the Department received a letter from the International Paper Company (IPC) regarding the "withdrawal" of Permit No. 0330042-007-AC and the withdrawal of air construction permit Application No. 0330042-008-AC (PSD-FL-335). On January 23, 2006, the Department requested additional information and clarification. On March 1, 2006, the Department received a letter from Ms. Mary B. Conatser (IPC) providing additional details. The following is the Department's response.

1. Withdrawal of Air Permit Application No. 0330042-008-AC (PSD-FL-335): The purpose of this project was to increase production. The application is pending and a permit was never issued. IPC indicates that it has changed its plans and this project is no longer being pursued. New plans are identified in IPC's application submitted to the Department's Northwest District office on February 24, 2006. The proposed project identifies substantial changes to the plant including a decrease in the production of bleached pulp and the processing of mostly softwoods. The application will establish past actual emissions in accordance with the Department's new regulations. The Department accepts your withdrawal of Application No. 0330042-008-AC (PSD-FL-335) for an air permit. It will be terminated in our permit tracking system and deemed "withdrawn" on the date of receipt of Ms. Conatser's letter (March 1, 2006).

2. Surrender of Permit No. 0330042-007-AC: This permit was issued on July 23, 2003 with an expiration date of April 30, 2007. Once a permit is issued, it cannot be "withdrawn", but it can be surrendered. The primary purpose of this project was to establish baseline actual emissions prior to Project No. 0330042-008-AC (PSD-FL-335) while authorizing some component replacements. Only the following parts of this project were completed: replacement of existing Kamyr extraction screens with diagonal extraction screens; replacement of the causticizer body; and the replacement of two medium consistency pumps in the O_2 delignification and bleach plant area. IPC maintains that the component replacements did not increase production capacity and indicates that the remaining work will not be completed. In consideration of withdrawn Application No. 0330042-008-AC (PSD-FL-335) as well as the new project under review by the Department's Northwest District, the Department accepts your surrender of this permit.

A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000. Petitions filed by the applicant or any of the parties listed below must be filed within fourteen (14) days of receipt of this Written Notice of Intent to Issue Air Permit. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S., must be filed within fourteen (14) days of publication of the attached Public Notice or within fourteen (14) days of receipt of this Written Notice of Intent to Issue Air Permit, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within fourteen (14) days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner; the name, address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of how and when each petitioner received notice of the agency action or proposed action; (d) A statement of all disputed issues of material fact. If there are none, the petition must so state; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action; and, (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Permitting Authority's final action may be different from the position taken by it in this Written Notice of Intent to Issue Air Permit. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

If you have any questions regarding this matter, please call Bruce Mitchell at 850/413-9198 or Jeff Koerner at 850/921-9536 or write to me at the above letterhead address.

Sincerely,

Trina L. Vielhauer

Trina L. Vielhauer, Chief
Bureau of Air Regulation

TLV/bm/jfk

cc: Sandra Veazey, NWD
John Bunyak, NPS
Kyle Moore, IPC
Gregg Worley, EPA Region 4
Ellen Porter, USF&WS
William V. Straub, P.E., All4 Inc.

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1. Article Addressed to:

Mr. Christopher Read, Mill Manager
International Paper Company
Pensacola Mill
375 Muscogee Road
Cantonment, Florida 32533-0087

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X ☐ Agent ☐ Addressee

B. Received by (*Printed Name*) Martha A. [illegible]

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Mr. Christopher Read, Mill Manager
International Paper Company
Pensacola Mill
375 Muscogee Road
Cantonment, Florida 32533-0087

PS Form 3800, May 2000 See Reverse for Instructions

INTERNATIONAL PAPER

RECEIVED
JUL 07 2005
BUREAU OF AIR REGULATION

PENSACOLA MILL
375 MUSCOGEE ROAD
PO BOX 87
CANTONMENT FL 32533-0087
PHONE 850 968 2121

July 1, 2005

Trina L. Vielhauer
Florida Department of Environmental Protection
Division of Air Resource Management
2600 Blair Stone Road MS 5500
Tallahassee, Florida 32399-2400

Subject: International Paper—Pensacola Mill Pulp Production Increase
FDEP File No. 0330042-008-AC/PSD-FL-335

Dear Ms. Vielhauer:

International Paper wishes to suspend the departments processing of the subject permit until further notice. The mill is considering revising this application, and consequently wishes to hold up processing until it reaches a decision concerning the potential revision.

If you have any questions, please call Kyle Moore at 850-968-4253.

Sincerely,

Christopher Read
Mill Manager

cc: Bruce Mitchell, FDEP, Tallahassee, FL
Sandra Veazey, FDEP, Pensacola, FL

FLORIDA

Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary

February 7, 2005

CERTIFIED MAIL - Return Receipt Requested

Ms. Nicki S. Slusser, Mill Manager
International Paper Company
Pensacola Mill
375 Muscogee Road
Cantonment, Florida 32533-0087

Re: DEP File No. 0330042-008-AC/PSD-FL-335
Pensacola Mill
Pulp Production Increase

Dear Ms. Slusser:

The Department received the response to the incompleteness letter of October 8, 2004, on January 24, 2005. Based on our review of the proposed project and supplemental information, we have determined that the following additional information is needed in order to continue processing this application package. Please provide all assumptions, calculations, and reference material(s), that are used or reflected in any of your responses.

1. Submit the application pages for the modification of the ClO_2 Generator and the associated storage tanks. This operation is a regulated emissions unit operation (please see Section III., Subsection I in the Title V Air Operation Permit). Please provide the pollutant emission calculations for the unit operation (ClO_2 Generator and associated storage tanks) for the baseline and future operations.

2. In Section 6.3.1, a reference was made to Table C-1. That table was not included with the latest response. Is the table what was submitted in the original application? If not, please provide the table.

The Department will resume processing this application after receipt of the requested information. If you have any questions regarding this matter, please call Bruce Mitchell at (850)413-9198 or Cleve Holladay at (850)921-8986.

Sincerely,

Trina L. Vielhauer
Chief
Bureau of Air Regulation

TLV/bm

cc: Gregg Worley, EPA
John Bunyak, NPS
Ellen Porter, USF&WS
Sandra Veazey, NWD
William V. Straub, P.E., All4 Inc.

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1. Article Addressed to:

Ms. Nicki S. Slusser, Mill Manager
International Paper Company
Pensacola Mill
375 Muscogee Road
Cantonment, Florida 32533-0087

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☒ Agent ☐ Addressee

B. Received by (*Printed Name*) DAVID J. [illegible]

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Ms. Nicki S. Slusser, Mill Manager
International Paper Company
Pensacola Mill
375 Muscogee Road
Cantonment, Florida 32533-0087

PS Form 3800, May 2000 See Reverse for Instructions

RECEIVED
JAN 24 2005
BUREAU OF AIR REGULATION

Janaury 19, 2005

Trina L. Vielhauer
Florida Department of Environmental Protection
Division of Air Resource Management
2600 Blair Stone Road MS 5500
Tallahassee, Florida 32399-2400

Subject: International Paper – Pensacola Mill Pulp Production Increase
DEP File No. 0330042-008-AC/PSD-FL-335
Response to DEP October 8, 2004 Comments

Dear Ms. Vielhauer:

This letter is in response to a letter that International Paper Company (IP) Pensacola, FL Mill received from you dated October 8, 2004. The October 8, 2004 letter requested additional information concerning the Prevention of Significant Deterioration (PSD) permit application for a pulp production increase at the Mill. IP has reviewed the DEP informational requests verbally with Mr. Bruce Mitchell and Mr. Cleve Holladay on November 3, 2004. Based on discussions from the November 3, 2004 conference call, IP has prepared the following responses to the information request.

1. *The baseline years selected for the latest submittal was 2001-2002. Why did you not include the year 2003 and part of year 2004 for the evaluation? Rule 62-210.200, F.A.C., Definitions, describes "actual emissions" as the "the average rate, in tons per year, at which the emissions unit actually emitted the pollutant during a two year period which precedes the particular date and which is representative of the normal operation of the emissions unit. The Department may allow the use of a different time period upon a determination that it is more representative of the normal operation of the emissions unit." Please submit either a justification for the years 2001-2002 for the baseline years or calculate and submit the actual emission for the affected emission units using the data for the time period that would include the year 2003 and part of year 2004; in addition, the same timeframe shall be required for evaluating the PSD increment.*

   IP submitted the PSD application in July 2003. In August 2003, IP received a written request by Florida DEP for additional information regarding various sections of the PSD application. The letter did not question the use of the 1998/1999 baseline period. USEPA Region IV and Florida DEP subsequently made a verbal request to IP to match the baseline emission inventory (1998/1999) with the years used to demonstrate compliance with the PSD increment (2001/2002) in the air quality modeling analysis. In November 2003, IP updated the baseline emission inventory to 2001/2002 in order to match the PSD increment. However, before IP could submit the revised baseline information, Florida DEP indicated that no action on the IP PSD permit application could be scheduled until an issue involving the National Ambient Air Quality Standards

(NAAQS) was resolved. The NAAQS issue involved SO_2 and elevated concentrations due to emissions from the Gulf Power Crist Power Plant. The resolution of the SO_2 air quality issues required several months and extended into 2004. In February 2004, Florida DEP notified IP that the 1998/1999 baseline data could no longer be used since 1998 was not within the five year period of allowable baseline years.

At this time, IP believes that the 2001/2002 baseline data should be acceptable for establishing the PSD applicability. Since the baseline data were originally updated in mid 2003, a full year of 2003 emissions/production data were not available and the 2002 data represented the most recent yearly data. IP does not believe that the baseline data should be revised only because the extended amount of time required to resolve the Gulf Power SO_2 air quality issues resulted in additional months of production data becoming available.

Additionally, IP has performed a preliminary review of black liquor solids (BLS) firing, lime production, air dried tons of unbleached pulp production (ADTUP), and chip production for 2003 and part of 2004. The 2003 BLS and the lime production rates are -4.7% lower than the 2001/2002 baseline period. The 2003 ADTUP and chip production are +1.7% and +2.6% respectively greater than the 2001/2002 baseline period. The available 2004 data trend the 2003 data. Based on this preliminary comparison of the 2003 and 2004 data to the 2001/2002 baseline data, only minor differences in baseline emissions would likely result. Therefore, IP believes that the 2001/2002 baseline data are appropriate for use and are representative of the way the Mill normally operates.

2. *Referring to the response to Question No. 4 of the request to additional information dated August 29, 2003 (RAI), a Table 1 was referred to "as attached to this letter", but doesn't seem to be attached . Please provide the table.*

   Table 1 has been superseded by the more detailed BACT analysis and tables provided in the Revised Section 6 of the Permit Application (see responses to Comments 3 and 5).

3. *Regarding the usage of scrubbers on the Recovery Boilers (RBs) and potentially lower sulfur fuel oil in the RBs (Nos. 1 and 2) and the Lime Kiln (LK), your answer to questions Nos. 4 and 5 of the RAI did not use the top down BACT approach. Therefore, please use the top down BACT approach to evaluate SO_2 BACT, which should include scrubber evaluation and the feasibility of using lower sulfur content fuel oil in the RBs and LK (current BACT for power boilers is 0.05% by weight). Again, please evaluate the cost analysis on fuel oil with sulfur contents of 0.5, 0.1, and 0.05 percent by weight.*

   Please see the revised BACT analysis (Section 6) that has been attached.

4. *Again, from the BACT table provided in the original submittal, the SO_2 value that is proposed as BACT for each of the RBs (151 lbs/hr) is not the lowest value listed and seems to be very high compared to their past actuals (66 lbs/hr for Unit 1 and 45 lbs/hr*

for Unit 2). In your response to Question 5 of the RAI, it appears that you are requesting the higher emission rate due to 100% operation on fossil fuels. As such, this method of operation would not be considered as a normal operation for a RB covered under 40 CFR 60, Subpart BB, and Rule 62-296.404, F.A.C. If you desire the RBs to be considered as fossil fuel fired boilers, then they need to be permitted as such; and, therefore, please provide the applicable requirements for this method operation in the appropriate sections of the application form

The Recovery Furnaces at the Mill normally fire BLS and use natural gas for start-up/ shut down and load stabilization. The Recovery Furnaces are also capable of firing fuel oil for start-up/shut-down and load stabilization although this fuel firing scenario is very uncommon. The Mill needs to maintain the flexibility to fire fuel oil and the SO_2 permit conditions need to reflect this flexibility on a short-term basis. On an annual basis, the Mill is willing to commit to a lower annual ton per year SO_2 emission limit that would allow up to two months of oil firing for each recovery furnace (1488 hours). The Mill believes that an annual SO_2 limit of 185 tpy for each recovery furnace is appropriate.

5. *Again, from the BACT table provided in the original submittal, the NO_X value that is proposed as BACT for each of the RBs (110 ppm_{dv} @ 8% O_2) is in the middle of the values listed. The answer that you gave to Question No. 6 of the RAI did not adequately provide reasonable assurance that you are achieving the lowest BACT for NOx and did not use the top down BACT approach. Therefore, please use the top down BACT approach to evaluate NO_X BACT. Also in order to provide some specific justification for a higher NO_X BACT for your RBs, please provide the last five years of actual performance testing results for the NO_X emissions from each emissions unit.* ***Because of the ambient concerns for ozone for Escambia County and the surrounding area, it seems appropriate to achieve the lowest emission rate possible for NOx.***

   Please see the revised BACT analysis (Section 6) that has been attached.

6. *The SO_2 and NO_2 significant impact results presented in Table 7-11 appear to be incorrect. The significant impact results presented for these two pollutants on the accompanying disk are much higher than those given in the table. Please submit the correct values.*

   The significant impact results listed in Table 7-11 for SO_2 and NO_2 are correct. The use of the 2002/2001 baseline emissions required that the annual significant concentrations be updated. The updated annual significance analysis concentrations were submitted as part of the September 2004 response to comments. It was not necessary to update the short-term significance analysis. On a short-term basis, the modified and affected emissions units still achieved peak short-term production rates and thus there was no difference in short-term emissions or concentrations. Therefore the air quality modeling files submitted with the July 2003 PSD application that address short-term significant impacts are still valid. To eliminate the confusion associated with two sets of air quality modeling runs, a revised CD containing averaging specific input and output files has been provided. The two earlier CDs should be discarded. It should be noted that the NO_2 significant concentration results shown in Table 7-11 reflect the NO to NO_2 conversion factor of 0.75.

7. *Modification of the SO_2 permit limits for Power Boilers 3 and 4 are being requested. We requested that in Comment 1 of the August, 2003 RAI that inputs into the air dispersion modeling should be based on future/potential/allowables. The SO_2 PSD increment analysis submitted with this revised application did not use the potential/allowables for these emission units. Please correct and resubmit. In addition, the SO_2 PSD analysis shows a predicted maximum 24-hour SO_2 increment impact of 90.92 $\mu g/m^3$ using actual emission rate inputs of 161 lb/hr and 1002 lb/hr for Power Boilers 3 and 4, respectively. This impact compares to the 24-hour increment of 91 ug/m3. However, for Power Boilers 3 and 4, International Paper ahs requested permit limits of 201 lb/hr and 300.3 lb/hr, which, if they were to become actuals in the future, would result in predicted violations of the 24-hour SO_2 increment solely to the International Paper sources, and would prevent the Department from issuing permits with these limits. Please address this issue to remove the problem*

   As IP discussed with Florida DEP, the No. 3 and No. 4 Power Boilers are not being modified as part of the PSD project. Furthermore, no additional steam will be required from either of these two boilers are part of the proposed project. Since the boilers are not modified nor affected, a PSD increment analysis requires that the **actual** peak short-term emission rates be used to demonstrate compliance with the PSD short-term increments. IP reviewed operating data for the baseline period, 2001/2002, and determined the peak **actual** short-term SO_2 emission rate for each boiler and used that emission rate in the PSD increment analysis.

   IP has elected to commit to lower SO_2 limits for each boiler in order to allow operational flexibility throughout the Mill. The lower SO_2 limits were incorporated as part of the NAAQS analysis.

In addition to the above responses, IP has addressed several outstanding Mill items below.

1. IP modified the BACT determination for VOC from the Lime Slaker. IP has recently performed an engineering study around the Causticizing area in support of developing MACT compliance strategies (i.e., the clean condensate alternative) and determined that the VOC emissions from the Pensacola Mill's Lime Slaker are consistent with the National Council for Air and Stream Improvement (NCASI) historical test data. The impact of the new BACT determination is approximately a 2.5 ton/yr increase in VOC emissions associated with the project. To account for this change, IP has included a new proposed BACT determination for VOC from the Lime Slaker (see Section 6.6) and updated several tables in the PSD application to reflect the new BACT limit, including Tables 3-4, the Section 4 Tables, and Table B-7.

2. Since the original application was submitted to the DEP in July of 2003, IP has completed subsequent engineering studies and has determined that the increase in pulp can not be recognized at the P5 Paper Machine. As a result, IP will be required to physically modify the P4 Pulp Dryer. The P5 Paper Machine was included in the original analysis as an "affected" emission unit. The P4 Pulp Dryer is included in this analysis as a "modified" unit. IP has updated the appropriate calculations (see Table B-14) and the following revised tables have been included: Table 2-1, Table 4-1, Table 4-2, and Table 4-4. Based on discussions with Mr. Bruce Mitchell of DEP on December 7, 2004, IP understands that a BACT analysis for the P4 Pulp Dryer is not required since VOC emissions increases from the modified unit, by itself, do not exceed the PSD significance levels. As a proactive measure, IP reviewed the RBLC database for paper machine entries associated with VOC control determinations. There are numerous BACT entries that are identified for VOC from coatings applied to the paper and there are additional entries that address the VOC from the pulp. The IP P4 Pulp Dryer does not include an on-machine coating system and, therefore, IP has only considered those entries that addressed VOC emissions from the pulp. The application of add-on controls for these types of paper machines has been determined to be technically infeasible due to the high exhaust gas volumetric flow rates and the low VOC concentrations in the exhaust streams. As a result, IP believes that BACT for the P4 Pulp Dryer is no add-on controls. Entries in the RBLC refer to the control of VOCs in the stock (or pulp) feeding the paper machines. IP minimizes the VOCs in the P4 Pulp Dryer stock, and the resulting VOC emissions by using freshwater/clean condensate shower water on the final stages of brownstock washing. IP believes that the current use of freshwater/clean condensate shower water on the final stages of brownstock washing minimizes the VOCs that are delivered with the pulp to the P4 Pulp Dryer and, therefore, minimizes the VOC emissions from the P4 Pulp Dryer. IP believes that this technique represents BACT. New DEP permit application forms for the P4 Pulp Dryer are included with this submittal.

3. In addition to the changes to the P4 Pulp Dryer, IP believes that the chlorine dioxide generator system will need to be modified to support the proposed production increase. As a result, IP will be required to modify the existing ClO_2 Generator or to construct a new ClO_2 Generator. The ClO_2 Generator, which only emits minor amounts of VOCs, will qualify as a "modified" emission unit. The Mill reviewed emission factors for the ClO_2 Generator and has determined that, using NCASI VOC emission factors, the ClO_2 Generator is a minor source of VOC emissions (see Table B-15). Using the Mill's proposed future pulp production of 1650 tpy, the <u>total</u> <u>potential</u> VOC emissions from the ClO_2 Generator, based on a maximum production rate of 1,650 ATDBP/day, are 4.6 tpy as carbon. If a new ClO_2 Generator was added or the existing generator was modified, the difference between the current baseline actual emissions and the potential to emit would be less than 4.6 tpy (assuming a baseline emission level of 0.0 tpy). A preliminary review of the RBLC shows no BACT determinations for ClO_2 Generators. Given the extremely low VOC emission levels and the fact that this unit would qualify as an

insignificant emissions unit under Florida permitting rules, it will not be cost efficient to control the small amount of VOC emissions and the BACT determination would be no control. IP has included the emissions increase from the ClO_2 Generator in the project emissions inventory. IP has not included any DEP permit application forms for this unit as we believe that the unit is insignificant pursuant to Chapter 62-210.300(3)(b)(1).

With the above responses, IP believes that all outstanding issues with the PSD application have been addressed. IP appreciates your continued patience and support with our permitting project. If you have any questions concerning this matter, please call me at 850.968.2121 extension 3833.

Sincerely,
International Paper Company – Pensacola Mill

Jim Spahr
Senior Environmental Engineer

cc: Bruce Mitchell – DEP
Gregg Worley – EPA
John Bunyak – NPS
Ellen Porter – USF&WS
Sandra Veazey – DEP NWD
Bill Straub, PE – All4

Owner/Authorized Representative or Responsible Official

1.	Name and Title of Owner/Authorized Representative or Responsible Official: *Nicki Slusser, Mill Manager*
2.	Owner/Authorized Representative or Responsible Official Mailing Address: Organization/Firm: ***International Paper Company Pensacola Mill*** Street Address: ***375 Muscogee Road*** City: ***Cantonment*** State: ***FL*** Zip Code: ***32533-0087***
3.	Owner/Authorized Representative or Responsible Official Telephone Numbers: Telephone: ***(850) 968 - 2121*** Fax: ***(850) 968 - 3068***
4.	Owner/Authorized Representative or Responsible Official Statement: *I, the undersigned, am the owner or authorized representative*(check here [ ], if so) or the responsible official (check here [ ], if so) of the Title V source addressed in this application, whichever is applicable. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof. I understand that a permit, if granted by the Department, cannot be transferred without authorization from the Department, and I will promptly notify the Department upon sale or legal transfer of any permitted emissions unit.* Nicki Slusser 1/20/05 Signature Date

* Attach letter of authorization if not currently on file.

TABLE 2-1 (Revised January 2005)
LIST OF EMISSION UNITS IMPACTED BY THE PROJECT
MODIFIED AND AFFECTED UNITS
INTERNATIONAL PAPER COMPANY - PENSACOLA MILL

Mill Area	Emission Units	Modified Units	Affected Units	Emission Calculation		Pollutants
				Actual to Potential	Incremental Increase	
WOODYARD	Woodyard Activities		X		X	PM_{10}
	Pine Chip Thickness Screening System and New Pine Long Log Chipper		X		X	PM_{10}
THERMAL OXIDIZER	Thermal Oxidizer	X		X		VOC, SO_2, NO_X, PM_{10}, CO, TRS, H_2SO_4
	Controls LVHC NCG from Batch Digesters				b	
	Controls LVHC NCG from Kamyr Continuous Digester	X			a	VOC, TRS
	Controls LVHC NCG from No. 1 Evaporator Set				b	
	Controls LVHC NCG from No. 2 Evaporator Set	X			a	VOC, TRS
	Controls SOGs from No. 1 Steam Stripper		X		a	VOC, TRS
	Controls SOGs from No. 2 Steam Stripper		X		a	VOC, TRS
BLEACH PLANT	A-Line Bleach Plant Scrubber	X		X		VOC, CO
	B-Line Bleach Plant Scrubber				b	
	ERCO ClO2 Generator	X		X		VOC
	Methanol Storage Tank		X		X	VOC
RECOVERY	No. 1 Recovery Furnace	X		X		VOC, SO_2, NO_X, PM_{10}, CO, TRS, H_2SO_4
	No. 2 Recovery Furnace	X		X		VOC, SO2, NO_X, PM_{10}, CO, TRS, H_2SO_4
	No. 1 Smelt Dissolving Tank		X	X		VOC, PM_{10}, SO_2, TRS
	No. 2 Smelt Dissolving Tank		X	X		VOC, PM_{10}, SO_2, TRS
LIME KILN	Lime Kiln/Mud Dryer	X		X		VOC, SO_2, NO_X, PM_{10}, CO, TRS
CAUSTICIZING	Lime Slaker	X		X		VOC, PM_{10}, TRS
	New Causticizer	X		X		VOC
UNREGULATED EMISSIONS	No. 1 Brown Stock Washing		X		X	VOC
	A-Line O2 Delignification		X		X	VOC, TRS
	Post O2 Press	X		X		VOC, TRS
	Bleach Plant - Other Sources		X		X	VOC, CO
	Digesters - Other Sources		X		X	VOC, TRS
	Evaps - Other Sources		X		X	VOC, TRS
	Lime Kiln/Mud Dryer - Other Sources		X		X	VOC
	Causticizing Area - Other Sources		X		X	VOC
	Converting Baghouse		X		X	PM_{10}
	Waste Water Treatment		X		X	VOC
POWER	Nos. 3, 4, 5 and 6 Power Boilers				b	
	Coal & Ash Handling and Storage				b	
PAPER MACHINES	P4 Paper Machine	X		X		VOC
	P5 Paper Machine Starch Silos 1&2, Clay Silo Dust Collector		X		X	PM_{10}
	P5 Paper Machine Make-Down Area Vent		X		X	PM_{10}
MISC.	Tall Oil Plant		X		X	VOC, TRS
	Roadways, Storage Piles, Material Handling Fugitive Emissions		X		X	PM_{10}

(a) The incremental increase is included with the Thermal Oxidizer

(b) This unit is part of the Hardwood Line and is not impacted by the proposed project.

Table 3-4
Summary of Proposed Emission limits – Modified Lime Slaker
International Paper Pensacola, FL Mill (Revised January 2005)

Emitting Unit	Pollutant and Averaging Period	Mass Emission Rate	Pollutant Concentration
Lime Slaker	PM_{10} (24-hour and Annual Average)	1.59 lb/hr and 7.0 tpy	Existing permit limit
	TRS (12-hour Average)	1.3 lb/hr and 5.7 tpy	0.054 lb/ton CaO
	VOC (Annual Average)	1.2 lb/hr and 5.2 tpy	0.049 lb/ton CaO

TABLE 4-1 (Revise[illegible]uary 2005)
PROJECT EMISSIONS INVENTORY
MODIFIED AND AFFECTED UNITS 2002/2001 BASELINE YEARS
INTERNATIONAL PAPER COMPANY - PENSACOLA MILL

Mill Area	Emission Unit	PSD Pollutant Emission Increases (tons/yr)									
		PM	PM_{10}	SO_2	NO_X	CO	VOC	TRS	H_2SO_4	Pb	Hg
WOODYARD	Woodyard Activities [a]	3.23	3.23	--	--	--	--	--	--	--	--
	Pine Chip Thickness Screening System and New Pine Long Log Chipper	0.14	.0.14	--	--	--	--	--	--	--	--
THERMAL OXIDIZER	Thermal Oxidizer	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	--	--
BLEACH PLANT	A-Line Bleach Plant Scrubber	--	--	--	--	39.89	0.26	--	--	--	--
	ERCO ClO2 Generator						1.04				
	Methanol Storage Tank	--	--	--	--	--	0.53	--	--	--	--
RECOVERY	No. 1 Recovery Furnace	31.03	31.03	595.22	220.16	1102.74	36.61	12.66	0.82	0.0018	0.0061
	No. 2 Recovery Furnace	-5.29	-5.29	616.95	322.72	1388.15	44.40	16.20	0.81	0.0018	0.0060
	No. 1 Smelt Dissolving Tank	93.31	93.31	0.30	--	--	0.59	1.75	--	--	--
	No. 2 Smelt Dissolving Tank	93.69	93.69	0.32	--	--	0.55	3.92	--	--	--
LIME KILN	Lime Kiln/Mud Dryer	52.31	52.31	27.50	287.94	33.09	200.40	4.01	--	0.0047	0.0035
CAUSTICIZING	Lime Slaker	3.10	3.10	--	--	--	2.08	2.27	--	--	--
	New Causticizer	--	--	--	--	--	0.11	--	--	--	--
UNREGULATED EMISSIONS	No. 1 Brown Stock Washing	--	--	--	--	--	4.00	--	--	--	--
	A-Line O_2 Delignification	--	--	--	--	--	31.38	6.30	--	--	--
	Post O_2 Press	--	--	--	--	--	15.60	0.93	--	--	--
	Bleach Plant - Other Sources	--	--	--	--	--	4.35	--	--	--	--
	Digesters - Other Sources	--	--	--	--	--	2.22	3.33	--	--	--
	Evaps - Other Sources	--	--	--	--	--	9.14	2.12	--	--	--
	Lime Kiln/Mud Dryer - Other Sources	--	--	--	--	--	2.28	--	--	--	--
	Causticizing Area - Other Sources	--	--	--	--	--	9.45	--	--	--	--
	Converting Baghouse	0.41	0.41	--	--	--	--	--	--	--	--
	Waste Water Treatment	--	--	--	--	--	101.10	--	--	--	--
PAPER MACHINES	P4 Paper Machine	--	--	--	--	--	9.44	--	--	--	--
	P5 Paper Machine Starch Silos 1&2, Clay Silo Dust Collector, Dry Additives	0.32	0.32	--	--	--	--	--	--	--	--
	P5 Paper Machine Make-Down Area Vent	0.11	0.11	--	--	--	--	--	--	--	--
MISC.	Tall Oil Plant	--	--	--	--	--	--	--	--	--	--
	Roadways	9.34	9.34	--	--	--	--	--	--	--	--
	Totals	**281.71**	**281.71**	**1240.28**	**830.82**	**2563.88**	**475.53**	**53.48**	**1.62**	**0.008**	**0.016**

[a] - Woodyard Activities include the Pine Chip No. 1 Cyclone, Air Density Separator, Chip Piles, and wood handling emissions.
[b] - Emissions from the Thermal Oxidizer include the LVHC Handling System. Since components of the LVHC Handling System have been modified as part of this exercise and the full potential to emit for the Thermal Oxidizer was considered when quantifying emissions from a previous permitting exercise, the emissions from the Thermal Oxidizer have been included in the contemporaneous period.

TABLE 4-2 (Revised January 2005)
COMPARISON OF PROJECT EMISSION INVENTORY WITH PSD
SIGNIFICANT INCREASE THRESHOLD VALUES 2002/2001 BASELINE YEARS
INTERNATIONAL PAPER COMPANY - PENSACOLA MILL

Pollutant	Project-Related Emission Increase (tons/yr)	PSD Significance Levels (tons/yr)	PSD Significant
PM	281.71	25	Yes
PM_{10}	281.71	15	Yes
SO_2	1,240.28	40	Yes
NO_X	830.82	40	Yes
CO	2,563.88	100	Yes
VOC	475.53	40	Yes
TRS	53.48	10	Yes
H_2SO_4	1.62	7	No
Pb	0.01	0.6	No
Hg	0.02	0.1	No

TABLE 4-3
PROJECT CONTEMPORANEOUS PERIOD EMISSIONS INCREASES/DECREASES

INTERNATIONAL PAPER COMPANY - PENSACOLA MILL

Mill Area	Emission Unit	PSD Pollutant Emission Increases/Decreases (tons/yr)									
		PM	PM_{10}	SO_2	NO_X	CO	VOC	TRS	H_2SO_4	Pb	Hg
Thermal Oxidizer	Thermal Oxidizer	4.40	4.40	25.00	39.90	29.80	4.80	2.20	2.50	--	--
Unregulated Emissions	Post O_2 Press	--	--	--	--	--	-18.19	-1.09	--	--	--
	Totals	**4.40**	**4.40**	**25.00**	**39.90**	**29.80**	**-13.39**	**1.11**	**2.50**	**0.00**	**0.00**

(a) - Emssions from the Thermal Oxidizer include the LVHC Handling System. Since components of the LVHC Handling System have been modified as part of this exercise and the full potential to emit for the Thermal Oxidizer was considered when quantifying emissions from modified units in the pplicability determination, the emissions from the Thermal Oxidizer have not been included in the contemporaneous period.

TABLE 4-4 (Revised January 2005)
PROJECT NETTING ANALYSIS INCLUDING
CONTEMPORANEOUS PERIOD EMISSIONS AND 2002/2001 BASELINE YEARS
INTERNATIONAL PAPER COMPANY - PENSACOLA MILL

Pollutant	Project-Related Emission Increase (tons/yr)	PSD Significance Levels (tons/yr)	PSD Significant
PM	286.11	25	Yes
PM_{10}	286.11	15	Yes
SO_2	1,265.28	40	Yes
NO_X	870.72	40	Yes
CO	2,593.68	100	Yes
VOC	462.14	40	Yes
TRS	54.59	10	Yes
H_2SO_4	4.12	7	No
Pb	0.01	0.6	No
Hg	0.02	0.1	No

6. BEST AVAILABLE CONTROL TECHNOLOGY ANALYSIS

6.1 INTRODUCTION

The PSD regulations require that a Best Available Control Technology (BACT) analysis be conducted for modified emission units that are part of the project and emit any of the PSD significant pollutants. The following emission units are considered to be modified emission units (or a new unit in the case of the Post O_2 Press) and are subject to a BACT analysis:

- No. 1 Recovery Furnace
- No. 2 Recovery Furnace
- Lime Kiln/Mud Dryer
- Lime Slaker
- Digester System/Evaporator System/NCG Gas Handling System
- Post O_2 Press

Table 6-1 identifies the pollutants that were reviewed for the BACT analyses associated with each modified emission unit. Supporting BACT tables are provided in Appendix C and are referenced throughout this section.

Table 6-1

Pollutants Subject to BACT Review

for Modified Emission Units

Emission Unit	Pollutant
Nos. 1 and 2 Recovery Furnaces	PM/PM_{10}, SO_2, NO_X, CO, VOC, TRS
Lime Kiln/Mud Dryer	PM/PM_{10}, SO_2, NO_X, CO, VOC, TRS
Lime Slaker	PM/PM_{10}, VOC, TRS
Digester System	VOC, TRS
Evaporator System	VOC, TRS
Post O_2 Press	VOC, TRS

BACT determinations are case-by-case analyses that involve an assessment of the availability of applicable technologies capable of sufficiently reducing a specific pollutant emission, as well as the economic, energy, and environmental impacts of using each technology.

The methodology used in this study to determine BACT follows the "top-down" approach outlined in Chapter B of the EPA Draft *"New Source Review Workshop Manual"* dated October 1990. A "top-down" BACT analysis contains the following elements:

- Determination of the most stringent control alternatives potentially available.
- Discussion of the technical and economic feasibility of each alternative.
- Assessment of energy and environmental impacts, including toxic and hazardous pollutant impacts, of feasible alternatives.
- Selection of the most stringent control alternative that is technically and economically feasible and that provides the best overall control of all pollutants.

- Confirmation that the selected BACT is at least as stringent as NSPS and State Implementation Plan (SIP) limits for the source.

EPA Guidance recommends that the BACT analysis be conducted using a step by step approach. Specifically, a top-down BACT analysis includes the following 5 basic steps.

Step 1 – Identify all Available Control Technologies. *Compilation of all potential control technologies available. List should not exclude technologies implemented outside the United States.*

Step 2 – Eliminate Technically Infeasible Options. *Determine if any of the technologies identified in Step 1 are not technically feasible based on physical, chemical and engineering principles.*

Step 3 – Rank Remaining Control Technologies by Control Effectiveness. *Remaining control alternatives not eliminated in Step 2 are ranked in order of most effective (i.e., lowest emission rate) to the least. Each technology is evaluated based on economic, environmental and energy impacts.*

Step 4 – Evaluate Most Effective Controls and Document Results. *The information developed in Step 3 is objectively evaluated to determine whether economic, environmental, or energy impacts are sufficient to justify exclusion of the technology. The analysis begins with the top ranked technology and continues until the technology under consideration cannot be eliminated by any environmental, economic, and energy impacts which justify that the alternative is inappropriate as BACT.*

Step 5 – Identify BACT. *The highest ranked remaining technology is identified as BACT.*

The Pensacola Mill performed the BACT review for the modified emission units utilizing the following key technical resources to establish BACT levels:

- RACT/BACT/LAER Clearinghouse (RBLC) on the EPA Technical Transfer Network (TTN). The search was limited to determinations occurring after 1990 http://cfpub1.epa.gov/rblc/htm/bl02.cfm;
- California Air Resources Board (CARB) BACT Clearinghouse;
- The California South Coast Air Quality Management District (AQMD) BACT worldwide web site at http://www.aqmd.gov/bact/;
- The California Bay Area AQMD BACT worldwide web site at http://www.baaqmd.gov/permit/bactworkbook/default.htm;
- The Texas National Resource Conservation Commission's BACT worldwide web site at http://www.tnrcc.state.tx.us/air/nsr_permits/bact.htm;.
- Phone conversations with various EPA Regions and State regulatory agencies to identify any recent Recovery Furnace projects that were not yet posted on the RBLC database; and.
- Phone conversations with recovery furnace and control equipment vendors to inquire about any projects that may be in the pre-permit submittal stage and to query them on levels of control required on domestic or foreign projects with which they may be involved.

IP requests that DEP consider the BACT analysis in context with the NSR Reform regulations recently codified by the EPA and the "clean unit" designation. IP believes that the emission units that undergo a BACT determination as part of this exercise should be identified as clean units in the construction permit – consistent with the requirements presented in the NSR Reform regulations. IP understands that the clean unit designation will provide flexibility in future air permitting exercises and recognizes the importance of the clean unit designation as part of this PSD permitting process.

6.2 USE OF THE RACT/BACT/LAER CLEARINGHOUSE (RBLC)

The RBLC is an excellent tool for reviewing recent BACT determinations and control options. Unfortunately, however, the RBLC is like all databases and is only as good as the data that is entered into it. IP has made significant effort to review all entries to determine the validity of the data and the relativity of the data with respect to the IP proposed modifications. Provided below are several key IP considerations when applying the RBLC data.

- IP utilized all sections of the RBLC to review possible BACT determinations (i.e., IP did not constrict the query to just the determinations since 1993. Instead, IP search all determinations including draft determinations still in process.)

- IP only utilized RBLC entries that were representative of industry standard or mill specific processes/units. In addition, IP only included entries that were complete and enabled an accurate comparison/analysis of data. Entries that did not allow the development of a BACT emission rate in normal units of measure for a given process type (e.g., gr/dscf, lb/ton, ppmdv, etc.) were excluded from the review.

- IP performed follow-up conversations and review of entries that were not consistent with other RBLC entries.

- IP paid special attention to the Apple Grove Pulp and Paper Company, Inc. entries. The Apple Grove facility was a proposed "Greenfield" facility to be constructed in West Virginia that underwent a detailed BACT review. Many of the BACT determinations for the Apple Grove facility are much lower than historical pulp and paper industry BACT determinations. IP contacted the West Virginia Air Pollution Control Commission to discuss these determinations. The West Virginia Agency indicated that this facility has not been constructed and these BACT determinations have not been demonstrated. As a result, IP has presented the Apple Grove determinations for various emission units in the BACT summaries; however, IP has not relied upon these undemonstrated values in BACT determinations for IP units.

Provided below are the BACT determinations for the modified emission units at the IP Pensacola Mill.

6.3 NOS. 1 AND 2 RECOVERY FURNACES BACT ANALYSIS

In performing the BACT review and analyzing the various BACT determinations, it is important to recognize that the Nos. 1 and 2 Recovery Furnaces are existing direct contact evaporator (DCE) units, originally designed and constructed in 1975. Many of the determinations in the EPA's RBLC are for new recovery furnaces. While IP believes that the proposed control technologies included in this application are consistent with previous control technology determinations for both new and modified existing furnaces, the fact remains that the Nos. 1 and 2 Recovery Furnaces are older units. This is reflected in the proposed BACT emission limits for certain pollutants which may be slightly higher than limits proposed for new recovery furnaces. There are operational and physical constraints associated with older modified units that prevent them from obtaining the same levels of control as new units.

When the Nos. 1 and 2 Recovery Furnaces were designed, it was common practice to burn black liquor at lower percent solids. Operators of Recovery Furnaces learned in later years that operating at higher solids increased thermal and chemical reduction efficiency and also resulted in lower TRS and SO_2 emissions. The introduction of higher solids to the Nos. 1 and 2 Recovery Furnaces results in heat releases per unit area that are much higher than newly constructed furnaces, which are designed to meet lower heat release design criteria. The Recovery Furnace cross-sectional area is limited by the footprint of the boiler and is constrained by the location of the existing four walls. Upon project completion, the Recovery Furnace will be operating at an even higher heat release rate. The project will be conducted in a manner that meets all safety standards for Recovery Furnaces. However, it is important to note that the Nos. 1 and 2 Recovery Furnaces cannot be directly compared to other modified Recovery Furnaces in the RBLC, due to their high heat release rates. A summary of the BACT evaluation for each pollutant is provided in the Subsections below.

6.3.1 BACT for PM/PM_{10}

A summary of the PM/PM_{10} data obtained from the RBLC search is provided in Table C-1. PM/PM_{10} concentrations identified in the RBLC range from 0.012 gr/dscf to 0.044 gr/dscf, corrected to 8% O_2. There are numerous PM control technologies that are available; however, due to technical considerations associated with the operation of a recovery furnace, PM control within the industry is achieved with the use of an electrostatic precipitator (ESP). All entries in the RBLC included the application of an ESP.

IP contacted the appropriate state regulatory agencies regarding the Apple Grove Pulp and Paper Company in West Virginia and U.S. Alliance facility located in Alabama. In both cases, representatives of the state regulatory agencies indicated that these units were not constructed and that they had not demonstrated compliance with the proposed BACT limits. As a result, IP proposes to meet the 0.021 gr/dscf at 8% O_2 on a long term basis by rebuilding and improving the existing two-chamber ESP. This emission rate is consistent with the most stringent limits that have been achievable through demonstration for the sources listed in Table C-1.

6.3.1.1 Proposed PM/PM_{10} BACT

IP conducted the PM/PM_{10} BACT analysis by reviewing the most recent emission limitations identified in the EPA RBLC, confirming that the current control technology employed by the recovery furnaces (i.e., ESP) represents a BACT level of control and accepting the most stringent emission limitation that has been achievable through demonstration. The analysis did not include any economic justification for emission limitations for any other less stringent levels of emissions. IP is already planning to upgrade the ESPs in order to meet the MACT standard requirements codified in 40 CFR 63, Subpart MM and is committed to meet the most stringent BACT limit of 0.021 gr/dscf at 8% O_2, regardless of economic analysis. This proposed BACT level is also more stringent than the recently promulgated MACT standard limits.

6.3.2 BACT for Nitrogen Dioxide

Nitrogen oxides (NO_X) are products of all conventional combustion processes. Nitric oxide (NO) is the predominant form of NO_X produced at high temperatures, with lesser amounts of nitrogen dioxide (NO_2) present. Once emitted, NO converts to NO_2 in the atmosphere. NO and NO_2 are collectively referred to as NO_X. The generation of NO_X from fuel combustion is a result of two formation mechanisms: fuel-derived NO_X and thermal NO_X formation. Fuel-derived NO_X is the result of the oxidation of nitrogen compounds contained in the fuel. Most of the NO_X emissions from recovery furnaces can be attributed to fuel NO_X resulting from partial oxidation of the black liquor nitrogen content. The NO_X produced by exposing nitrogen in the combustion air supply (ambient air contains 79 percent nitrogen by volume) to high temperatures (>2,200°F) is referred to as thermal NO_X. The black liquor nitrogen content is partially oxidized to form NO_X.

Kraft recovery furnaces are a unique type of combustion source that are inherently "low-NO_x". The furnace process involves injecting black liquor through specially designed nozzles so that organics, including lignin derivatives, carbohydrates, soaps, waxes, and residual fiber will combust and the sodium compounds in the liquor can be recovered as molten smelt and tapped from the char bed at the furnace bottom. Recovery furnaces operate with a reducing zone in the lower part of the furnace and an oxidizing zone in the region of the liquor spray guns and secondary air thereby "staging" combustion.

6.3.2.1 Nitrogen Dioxide Control Alternatives

There are two basic approaches to controlling NO_X emissions from combustion processes. The first approach consists of combustion modifications that attempt to control the introduction of combustion air in such a way that N_2 formation is favored over NO_X formation in the combustion zone. These modifications typically include staging combustion so that combustion air is limited in the first stage to create a reducing environment, followed by the introduction of excess air in the second stage. Staged combustion can reduce both fuel NO_X and thermal NO_X formation.

Reduction of peak flame temperatures and/or oxygen content can further reduce thermal NO_X formation.

The second approach to NO_X control involves conversion of NO_2 to N_2 and water in the presence of a reducing reagent at elevated temperatures. This reaction can occur at high temperatures (1,600 to 2,000°F) without the assistance of a catalyst where the technology is known as Selective Non-Catalytic Reduction (SNCR). Alternatively, the reaction can take place at lower temperatures (600 to 750°F) in the presence of a catalyst where the technology is known as selective catalytic reduction (SCR). The common reagents used for these techniques are ammonia (NH_3) and urea (NH_2CONH_2).

Reviewing these control options using the top-down approach, IP ranks the controls in the following order:

1. Selective Catalytic Reduction (SCR)
2. Selective Non-catalytic Reduction (SNCR)
3. Combustion Controls

IP has included an analysis of each of there control technologies below.

Selective Catalytic Reduction (SCR)

SCR involves injecting ammonia (NH_3), a reducing agent, into the flue gas stream at the inlet of a catalytic reactor. The ammonia reacts with the NO_2 on the catalyst surface to form nitrogen and water. Optimum NO_2 reduction occurs at catalyst bed temperatures between 600 and 750°F. The ammonia is stored as a liquid, then is vaporized and injected into the flue gas using air or steam as a carrier/dilution gas.

Extensive SCR experience has been gained in the U.S. and by the Japanese, mostly on base-loaded combustion turbines firing natural gas. These applications have been shown to operate at

NO_2 reduction rates of up to 90 percent when the gas temperature and the ammonia feed rate are maintained in the correct ranges. SCR represents the "top" NO_2 control technology alternative based on the maximum potential reduction achieved.

Of primary concern with the consideration of the application of SCR to the project is that the technology is undemonstrated for Kraft recovery furnace operations. The particulate matter loading present in the recovery furnace exhaust will foul the catalyst. Based on the technical inapplicability of SCR to the proposed recovery furnace project, SCR is eliminated from further consideration as an alternative NO_2 control technology.

Selective Non-Catalytic Reduction (SNCR)

Two SNCR technologies are commercially available. These technologies represent the next most significant potential NO_X emission reduction options following SCR. Thermal $DeNO_X$ is ExxonMobil Research and Engineering Company's patented SNCR technology for reducing NO_X by injecting ammonia into the flue gas. The ammonia reduces the nitrogen dioxide to molecular nitrogen and water without a catalyst. The flue gas temperature must be much higher for thermal $DeNO_X$ than for SCR, in the range of 1,600-2,000°F. The ammonia is stored as a liquid, then vaporized and injected into the flue gas using a carrier gas such as compressed air or steam. The air or steam dilutes the ammonia and facilitates dispersion into the flue gas. Fuel Tech has another patented SNCR technology, NO_XOUT that involves injection of a urea-based reagent into flue gases.

SNCR has been applied to gas-fired boilers and has achieved NO_2 reductions of 70 to 80 percent. Other SNCR applications on commercial oil-fired boilers and oil and coal-fired utility boilers, glass furnaces, and municipal solid waste incinerators have achieved NO_2 reductions in the 40 to 60 percent range. As stated above, the optimal temperature window for SNCR is between 1,600 and 2,000°F. When applied to oil and gas-fired boilers, this temperature window is within the upper portions of the furnace itself. A similar injection location would be necessary for applying SNCR to a recovery furnace. Due to the potential deleterious effect of injecting ammonia or urea into the actual Kraft recovery process, SNCR has not been applied to Kraft recovery furnaces in the United States. There are also several safety and operational issues associated with SNCR systems including:

- The safety risk of a smelt/water explosion should boiler tube walls corrode and leak near urea injection points.
- The additional safety risks associated with an ammonia handling system for the SNCR system.
- Operational concerns associated with the formation of acidic sulfates resulting in corrosion.

Exxon and Fuel-tech were contacted regarding their experience in the application of SNCR technology to Kraft recovery furnaces both domestically and internationally. Exxon had no knowledge of SNCR being applied to any Kraft recovery furnaces. Fuel-tech was involved in a single SNCR demonstration project on a Kraft recovery furnace in Sweden in 1990. The short pilot study project resulted in a 60% reduction in NO_2 emissions with about 8 ppm ammonia slip. SNCR was not used beyond the demonstration period and the long-term effect of SNCR on the recovery process and the recovery furnace could not be evaluated. A search of the RBLC confirmed that no domestic recovery furnace has used SNCR.

Since the SNCR process has not been demonstrated commercially on Kraft recovery furnaces and due to the additional safety and operational concerns associated with SNCR applied to Kraft recovery furnaces, IP considers SNCR technically infeasible.

Combustion Controls

Controlling the combustion process is a well-demonstrated NO_2 control method applied to stationary combustion sources. These techniques include low excess air (LEA), staged combustion and flue gas recirculation (FGR). LEA techniques control the combustion air supply, thereby minimizing the potential for thermal NO_X formation. Staged combustion, similar to LEA, minimizes combustion air (and therefore ambient nitrogen and oxygen) at the peak combustion temperatures and completes oxidation reactions in "stages" at lower temperatures. Temperature and oxygen availability are key determinants in the NO_2 formation kinetics. Staged combustion is effective at reducing NO_2 formation by minimizing the temperatures at which oxidation occurs. Both LEA and staged combustion techniques are inherent in Kraft recovery furnaces.

FGR re-introduces a portion of the combustion flue gases into the combustion zone. The flue gas has reduced oxygen content available for thermal NO_X formation in the combustion zone. FGR is typically used in gas or oil-fired boilers where the flue gases are relatively clean and can be readily recirculated. FGR is not applicable to the Kraft recovery furnace since it is not feasible to recirculate the recovery furnace exhaust gases.

6.3.2.2 Proposed Nitrogen Dioxide BACT

A summary of recent (post 1990) BACT determinations for NO_2 emissions from Kraft recovery furnaces is included in Table C-2. The more recent BACT determinations for NO_2 are generally trending higher than determinations from the early 1990s, i.e., 100 to 115 ppmdv @ 8% O_2 vs. 75 to 80 ppmdv @ 8% O_2. The increase may be attributable to the current trend to maximize the solids content of the black liquor fed to recovery furnaces (i.e., greater than 70%). The higher black liquor solids content results in higher furnace temperatures and greater NO_2 formation. Recent (post 1995) BACT NO_2 concentrations identified on the RBLC range from a low of 78 ppmdv @ 8% O_2 (Louisiana Pacific, CA-866, 4/12/99) to 112 ppmdv @ 8% O_2 (Georgia Pacific, LA - under review). The required control technology in all cases was related to proper design, operation, and control of the recovery furnace combustion process.

Most of the NO_2 emissions from recovery furnaces can be attributed to fuel NO_X resulting from partial oxidation of the black liquor nitrogen content. Recovery furnaces also operate with a reducing zone in the lower part of the furnace and an oxidizing zone in the region of the liquor spray guns and secondary air thereby "staging" combustion. Therefore, consistent with previous BACT determinations identified in Table C-2, IP proposes that BACT for NO_2 emissions from the DCE Kraft recovery furnace is proper design, operation, and control of the recovery furnace combustion process with a corresponding NO_2 concentration of 112 ppmdv @ 8% O_2. IP believes that the proposed BACT is justifiable due to the age of the recovery furnace (constructed in 1975), the type of recovery furnace (DCE unit) and the configuration of the combustion air delivery systems.

6.3.3 BACT for Sulfur Dioxide

There are two approaches to controlling SO_2 emissions from combustion sources. The first approach is to limit the sulfur content of the fuels being combusted in the combustion unit. The second approach is to implement add-on control in the form of a scrubbing technology. Limiting the sulfur content of the fuels is pretty self explanatory. The add-on SO_2 controls consist of wet scrubbing, dry scrubbing, and dry lime injection.

During normal operation when a recovery furnace is processing black liquor and not burning a large quantity of supplemental fuels like fuel oil, the sulfur dioxide generated from the combustion process is used in chemical reactions to produce Na_2SO_4 (less than 5% of S in the black liquor is typically converted to SO_2 that is emitted with the flue gas). As a result, the concentration of SO_2 out of the stack is typically low (i.e., usually between 5 and 30 ppmdv @8% O_2). Typically, during co-firing conditions where fossil fuels and black liquor are fired simultaneously and NCASI stack emission test results have shown that the overall SO_2 emissions are less than expected from the fossil fuel alone. The decrease in SO_2 emissions is most likely the result of the increase in "lower furnace" temperatures that occur during combustion of the fossil fuels. SO_2 emissions are consistent with other combustion processes during startup, shutdown, and malfunction conditions when the quantity of supplemental fuels is increased. SO_2 emissions generated from the combustion of fossil fuels are dependent on the sulfur content of the fuels. Natural gas has a very low sulfur content and very little SO_2 emissions are generated when firing this supplemental fuel. Fuel oil can have a range of sulfur contents that can greatly impact the quantity of SO_2 emissions that are generated.

Using the top-down approach to identifying a BACT level of control, IP ranks the controls in the following order:

1. Combustion Control
2. Fuel Sulfur content reduction
3. SO_2 Scrubbing (dry scrubbing, wet scrubbing, dry injection)
4. Multi-pollutant controls via combustion improvement (i.e., MobotecUSA process)
5. Flue gas desulfurization

NCASI has published studies that demonstrate that the best strategy to minimize SO_2 emissions from Kraft recovery furnaces is to optimize liquor properties (i.e., solids content, BTU value, etc.) and combustion air firing patterns. This combination results in maximum and uniform temperature in the "lower furnace" which leads to lower SO_2 emissions. IP has identified this as the BACT level of control.

IP also analyzed the sulfur content of the supplemental fossil fuels that are fire in the Kraft recovery furnaces. IP has included cost estimate spreadsheets to analyze the impact of switching to lower sulfur fuels. It should be noted that IP uses natural gas and No. 6 Fuel Oil for co-firing situations. IP has only co-fired the Recovery Furnaces with fuel oil for limited periods to test the oil firing system in recent years. Therefore, the BACT analysis evaluating lower sulfur fossil fuels does not reflect the typical operating practices for the Recovery Furnaces.

SO_2 scrubbing includes a number of alternatives including dry scrubbing, wet scrubbing, and dry injection. All of these alternatives involve the treatment of the flue gas to reduce SO_2 emissions by controlling the pH. IP spoke with several vendors and with representatives of NCASI and identified that the SO_2 inlet concentrations are too low (less than 5 ppmdv) and sometimes too variable to make these control options viable. IP determined that these techniques have not been demonstrated commercially on Kraft recovery furnaces and present possible retrofit and operational concerns. As a result, IP considers SO_2 scrubbing on the Kraft recovery furnaces technically infeasible.

IP also reviewed multi-pollutant combustion controls including the MobotecSystem from MobotecUSA. The MobotecSystem is designed to reduce NO_X, CO, SO_2, and Hg. The MobotecSystem relies on the following operational characteristics to achieve these reductions:

- changes to the combustion air including the addition of rotating opposed fire air (NO_X and CO control);
- addition of injected ammonia or urea (NO_X control);
- addition of limestone (SO_2 control);
- application of in-duct SCR (NO_X control); and
- addition of activated carbon (Hg control).

The MobotecSystem relies heavily on the principals of SCR which do not impact SO_2 emissions and are technically infeasible for control of recovery furnace NO_X emissions. Also, the addition of rotating opposed fire air can negatively impact the chemical reactions that occur in the recovery furnace zones and limestone injection (or dry scrubbing) is eliminated above as technically infeasible. The final consideration is that these techniques have not been demonstrated commercially on Kraft recovery furnaces. As a result, IP considers the addition of a multi-pollutant control system like the MobotecSystem on the Kraft recovery furnaces technically infeasible.

IP eliminated flue gas desulfurization from consideration as it is capital and energy intensive and, most importantly, its efficiency is unproven considering the low and variable levels of SO_2 in Kraft recovery furnaces. IP determined that these techniques have not been demonstrated commercially on Kraft recovery furnaces and considers flue gas desulfurization technically infeasible.

A summary of the SO_2 data obtained from the RBLC search is identified in Table C-3. SO_2 emissions from recovery furnaces are variable and are dependant on several factors including liquor properties (e.g., sulfidity, sulfur to sodium ratio, heat value, and solids content), combustion air, liquor firing patterns, furnace design features, and type of startup fuel. BACT SO_2 concentrations identified in the RBLC range from 10 ppmdv @ 8% O_2 to 220 ppmdv @ 4% O_2. It is important to note that the IP Nos. 1 and 2 Recovery Furnaces have the ability to utilize natural gas or fuel oil for startup and sustaining load, which results in different SO_2 emissions than during black liquor solids firing. Black liquor solids firing produces sodium fume, which effectively scrubs SO_2 emissions. Fuel oil firing, which is not the typical furnace operating scenario, results in SO_2 emissions that are consistent with the sulfur content of the fuel oil.

There is one entry in the RBLC that is 10 ppmdv @ 8% O_2 for SO_2. The recovery furnace is located at the James River facility in Camas, Washington and was installed in 1991. This mill installed "heat recovery" scrubbers on each of two recovery furnaces at the mill. Mr. Alan Butler of the Washington State Department of Ecology was contacted regarding the circumstances of the SO_2 limit determination. Based on the conversation with Mr. Butler, there are no underlying regulatory reasons (e.g., non-attainment, ambient impact, or Class I concerns) for the scrubbers. According to Mr. Butler, the primary purpose of the scrubbers is to recover heat and the scrubbers were not installed with the intent to reduce SO_2 emissions. Consequently, this is not an appropriate benchmark for developing a BACT level of control for SO_2.

The next most stringent entry in the RBLC is for 50 ppmdv SO_2, for a recovery furnace located at the IP facility in Quinnesec, Michigan. This furnace does not burn fuel oil, whereas the Pensacola Mill Recovery Furnaces are designed to startup and shutdown on fuel oil. Therefore, 50 ppmdv is not an appropriate BACT level for the Pensacola Recovery Furnaces.

6.3.3.1 Proposed BACT for Sulfur Dioxides

The Pensacola Mill proposes BACT for SO_2 for the modified recovery furnace to be proper design, operation, and control of the combustion process. The Mill proposes an SO_2 emission rate limit of 151 lb/hr which is the emission limit that has been identified for the unit in previous permit renewals. This value equates to approximately 94 ppmdv @ 8% O_2 for the No. 1 Recovery Furnace and approximately 86 ppmdv @ 8% O_2 for the No. 2 Recovery Furnace. IP believes that the concentration values are consistent with other recent BACT determinations and were developed considering the operating conditions and the fuel delivery system in the IP recovery furnaces.

IP also reviewed the impact of switching to lower sulfur fuels at the request of DEP. As provided above, the units are currently limited to 151 lb SO_2/hr which restricts that amount of fuel oil that may be fired during any period. The furnaces are each rated at 572 MMBtu/hr when firing natural gas or fuel oil and 655 MMBtu/hr when firing BLS. Using the current sulfur content of the No. 6 fuel oil burned at the Mill (1% S), the Recovery Furnaces would be fired at a rate lower than their rated heat input capacity to comply with the current SO_2 emission limit. The same logic holds true for a reduced sulfur content of 0.5% S – the Mill would have to operate at a reduced operating rate and the emissions would be 151 lb/hr. Consequently, IP had to look at a sulfur content of 0.1% S No. 2 Fuel Oil as the first alternative fuel that would result in a reduction of SO_2 emissions. IP performed a cost analysis and demonstrated that it would not be cost effective to fire 0.1% S No. 2 Fuel Oil in the Recovery Furnaces (~$82,000/ton of SO_2 removed). In the analysis, IP considered the capital cost of a new storage tank and distribution and handling system; however, the driving factor in the analysis is the cost of the fuel. IP also reviewed 0.05% S No. 2 Fuel Oil. The cost effectiveness of 0.05% S No. 2 Fuel Oil is essentially the same as 0.1% S No. 2 Fuel Oil (~$82,000/ton of SO_2 removed). The cost analysis spreadsheets are included in Appendix C as Tables C-20 and C-21.

6.3.4 BACT for Carbon Monoxide

CO is emitted from the combustion process occurring in the Kraft recovery furnace. Furnace design and combustion conditions within the furnace have the greatest influence on levels of CO in the furnace exhaust gases. Add-on pollution abatement equipment has not been applied for the control of CO emissions from recovery furnaces. Using the top-down approach to identifying a BACT level of control, IP ranks the controls in the following order:

1. Oxidation
2. Combustion Control

6.3.4.1 Control Alternatives

<u>Oxidation</u>

Oxidation is accomplished by raising the temperature of the exhaust stream to the level required for combustion by adding an auxiliary fuel. Process exhaust streams with a high energy content (i.e., high VOC content) may be self sustaining. However, as is the case with low CO concentration, for high volume process exhaust gas streams (such as recovery furnaces), the amount of auxiliary fuel required is too great for oxidation to be feasible from a cost perspective.

Catalytic oxidizers use a catalyst bed or matrix to convert CO into carbon dioxide (CO_2). Catalytic oxidation is essentially a flameless combustion process, wherein a catalyst is used to initiate the oxidation reaction at a much lower temperature than thermal oxidation. In most applications, the oxidizer is equipped with a burner and also with a heat exchanger to raise the exhaust gas to oxidation temperatures. Catalytic oxidation systems are available but have only been demonstrated on "clean" combustion processes such as combustion turbines. The technology is therefore not directly transferable to recovery furnaces.

Catalytic oxidizer disadvantages are primarily the potential for catalyst fouling. Catalyst poisons including metals, halides (e.g., chlorine), and sulfur may inactivate precious metal catalysts. Catalyst activity may also be reduced through blinding or masking (build-up of material on the active sites) or erosion of catalyst over time. Due to these disadvantages, catalytic oxidation is considered technologically infeasible for application on recovery furnaces.

Combustion Control

CO emissions from recovery furnaces generally result from incomplete combustion of the organic constituents in the fuel. Increasing residence time, oxygen, turbulence, and temperature may minimize CO emissions. However, these strategies must be carefully controlled since individually, and in aggregate, they act to increase the formation of NO_2.

6.3.4.2 Proposed Carbon Monoxide BACT

A summary of the CO data obtained from the RBLC search is identified in attached Table C-4. CO concentrations reflective of BACT identified on the RBLC range from a low of 200 ppmdv @ 8% O_2 to 800 ppmdv @ 8% O_2 with a mean of about 300 ppmdv @ 8% O_2. The required control technology in all cases was related to proper design, operation, and control of the combustion process. The Apple Grove Pulp and Paper Company entry was much lower than the rest of the range (17 ppmdv @ 8% O_2 citing the use of catalytic oxidation); however, as discussed previously, this unit has not been constructed and this level has not been demonstrated.

Consistent with the discussion presented above and the previous BACT determinations presented in Table C-4, IP proposes that BACT for CO from the modified recovery furnace is the proper design, operation, and control of the combustion process and a CO concentration of 500 ppmdv @ 8% O_2. The proposed CO concentration limit is further supported by the low, proposed NO_X concentration limit and the relationship of NO_X and CO in the combustion process.

6.3.5 BACT for Volatile Organic Compounds

VOC is emitted from the combustion process occurring in the Kraft recovery furnace. A summary of the VOC data obtained from the RBLC search is identified in attached Table C-5. Additional VOC may be "stripped" from black liquor in DCE recovery furnaces during the direct contact process. Furnace design and the combustion conditions within the furnace typically have the greatest influence on VOC concentrations in DCE recovery furnace exhaust. Add-on VOC abatement has not been applied to recovery furnace exhaust streams due to the extremely high volumetric flow rates from Kraft recovery furnaces and relatively low VOC concentrations. Using the top-down approach to identifying a BACT level of control, IP ranks the controls in the following order:

1. Combustion Control

6.3.5.1 Proposed Volatile Organic Compound BACT

The RBLC presents VOC BACT emission rates in a variety of units including lb/MMBtu, lb/TBLS, lb/hr, ton/year and ppm. In reviewing the secondary limits associated with the various RBLC entries, emission rates ranged from 18 lbs VOC/hr to 116 lbs VOC/hr. The required control technology in all cases was related to proper design, operation, and control of the combustion process. Increasing residence time, oxygen, turbulence, and temperature can reduce VOC emissions. However, these strategies act to increase the formation of NO_2.

Consistent with previous BACT determinations identified in Table C-5, BACT for VOC emissions from the modified recovery furnace is the proper design, operation, and control of the combustion process. The resulting VOC emission rate associated with the recovery furnace modification will be furnace-specific and will reflect the combustion characteristics of the furnace after the modification. IP proposes a BACT concentration limit of 50 ppmdv @ 8% O_2 for VOC from each Recovery Furnace.

6.3.6 BACT for Total Reduced Sulfur Compounds

Kraft recovery furnaces have the potential to generate TRS emissions from the recovery process as well as from the stripping of TRS compounds from black liquor in furnaces using wet bottom ESPs. Boiler design and optimization of combustion conditions in the Nos. 1 and 2 Recovery Furnaces are the most effective methods identified for minimizing TRS emissions from the recovery process itself. Table C-6 includes the listings from the RBLC for TRS BACT determinations. The IP Recovery Furnaces utilize black liquor oxidizers and combustion optimization to minimize TRS emissions from the recovery process.

6.3.6.1 Proposed Total Reduced Sulfur Compounds BACT

Consistent with previous BACT determinations identified in Table C-6, BACT for TRS emissions from the modified recovery furnace is the proper design, operation, and control of the combustion process. The resulting TRS emission rate is 5 ppmdv, corrected to 8% O_2, based on a 12-hour average. This limit is consistent with the NSPS requirement in Subpart BB, 40 CFR 60.283, as well as recent BACT determinations for recently modified recovery furnaces which are similar to the Pensacola Mill recovery furnaces.

6.4 *LIME KILN/MUD DRYER*

IP is planning modifications to the Lime Kiln/Mud Dryer. Lime Kiln/Mud Dryers utilize the hot flue gases from the kiln to remove the moisture from the lime mud prior to the lime mud entering the kiln. The flue gases and water vapor are separated from the lime mud in a cyclone. The gases exiting the Lime Kiln/Mud Dryer proceed to the Lime Kiln pollution control system.

A number of the determinations listed on the RBLC database are for new Lime Kilns. IP performed a BACT analysis for the Pensacola Mill Lime Kiln/Mud Dryer as part of the 1991 PSD application. After review of RBLC, IP believes that the BACT levels that were established as part of the 1991 PSD permitting process continue to satisfy BACT level of control. A pollutant-specific analysis is provided below.

6.4.1 BACT for PM/PM_{10}

A summary of the PM/PM_{10} data obtained from the RBLC search is provided in Table C-8. PM/PM_{10} concentrations identified in the RBLC range from 0.013 gr/dscf to 0.1 gr/dscf, corrected to 10% O_2. Control was achieved with the use of an electrostatic precipitator (ESP), wet scrubber, or fabric filter.

IP contacted the appropriate state regulatory agencies regarding the Apple Grove Pulp and Paper Company in West Virginia. A representative of the state regulatory agency indicated that this unit has not constructed and that they had not demonstrated compliance with the proposed BACT limits. The Lincoln Pulp and Paper Company Lime Kiln that utilize the wet scrubber as the particulate matter control device has identified a limit of 0.013 gr/dscf at 10% O_2. All Lime Kilns with ESP controls have identified 0.033 gr/dscf at 10% O_2 as the BACT level of control.

6.4.1.1 Proposed PM/PM_{10} BACT

IP proposes to continue to meet the 0.033 gr/dscf at 10% O_2 limit for the Lime Kiln on a long term basis. This emission rate is consistent with the most stringent limits that have been achievable through demonstration for the similar sources with similar control configurations listed in Table C-8. This proposed BACT level is also more stringent than the recently promulgated MACT standards identified in 40 CFR 63, Subpart MM.

6.4.2 BACT for Nitrogen Dioxide

Nitrogen Dioxide (NO_2) is a product of all conventional combustion processes. Nitric oxide (NO) is the predominant form of NO_X produced at high temperatures, with lesser amounts of nitrogen dioxide (NO_2) present. Once emitted, NO converts to NO_2 in the atmosphere. NO and NO_2 are collectively referred to as NO_X. The generation of NO_X from fuel combustion is a result of two formation mechanisms: fuel-derived NO_X and thermal NO_X formation. Fuel-derived NO_X is the result of the oxidation of nitrogen compounds contained in the fuel. The NO_x produced by exposing nitrogen in the combustion air supply (ambient air contains 79 percent nitrogen by volume) to high temperatures (>2,200°F) is referred to as thermal NO_X. NO_X emissions from Lime Kilns are generated primarily through thermal NO_X formation by the combustion of fossil fuel (oil or natural gas). Reviewing these control options using the top-down approach, IP ranks the controls in the following order:

1. Selective Catalytic Reduction (SCR)
2. Selective Non-catalytic Reduction (SNCR)
3. Combustion Controls

6.4.2.1 Control Alternatives

A detailed description of available NO_X control techniques is presented in Subsection 6.3.2.1 above.

Selective Catalytic Reduction

As detailed in Subsection 6.3.2.1 above regarding Recovery Furnaces, SCR is undemonstrated for Lime Kiln operations and the particulate matter loading present in the Lime Kiln exhaust will foul the catalyst. Consequently, SCR is not technically feasible for use on a Lime Kiln exhaust.

Selective Non-Catalytic Reduction

As detailed in Subsection 6.3.2.1 above regarding recovery furnaces, SNCR is undemonstrated for Lime Kiln operations. In addition there are potential harmful effects of injecting ammonia or urea into the Lime Kiln and several safety and operational issues associated with SNCR. Consequently, SNCR is not technically feasible for use on a Lime Kiln exhaust.

Combustion Controls

As previously discussed, thermal NO_X formation is related to conditions such as excess air, operating temperature, and residence time. Combustion technology utilizes integral methods of minimizing NO_X formation during the combustion process. Combustion design strategies that lower NO_2 emissions include reducing the available oxygen at critical stages in the combustion zone, lowering the peak flame temperature, and reducing the residence time during which nitrogen is oxidized.

The Lime Kiln is an inherently high-temperature operation requiring high flame temperatures and long residence times. Consequently, the combustion technologies listed and discussed above in

Subsection 6.3.2.1 are technically infeasible for this operation. Fortunately, NO_2 emissions from Lime Kilns are considered relatively low for the extreme combustion temperatures realized in the kilns because the gases can cool somewhat before exiting the kiln. This results in the NO_2 formation equation shifting back to N_2.

6.4.2.2 Proposed Nitrogen Dioxide BACT

A summary of the NO_2 data obtained from the RBLC search is identified in Table C-9. NO_2 concentrations identified on the RBLC ranged from a low of 175 ppmdv to 300 ppmdv @ 10% O_2. The required control technology in all cases (except one) was related to proper design, operation, and control of the combustion process. One entry identified the use of low NO_x burners as BACT for the control of NO_2 from Lime Kiln operations (3.5 lb. NO_2/ton CaO). To compare this emission rate to others identified on the search, entries stated as lbs. NO_2/hr that identified production in tons CaO/day were converted to a lbs. NO_2/ton CaO basis. The range of NO_2 emissions for these units was 2.19 to over 3.8 lb. NO_2/ton CaO.

IP followed up with state air pollution control agencies in West Virginia, Florida, Alabama, and Georgia regarding several of the lower BACT emission rates in Table D-8. The only demonstrated BACT emission rate was at the Buckeye Florida, L.P. facility that tested at less than 68.44 lbs. NO_2/hr. Consistent with the discussion above and previous BACT determinations, IP believes that BACT for NO_2 emissions from the Lime Kiln is proper design, operation, and control of the combustion process and the current emission levels that were determined from the 1991 BACT analysis (175 ppmdv @ 10% O_2 for natural gas combustion and 200 ppmdv @ 10% O_2 for fuel oil combustion).

6.4.3 BACT for Sulfur Dioxide

A summary of the SO_2 data obtained from the RBLC search is identified in Table C-10. SO_2 emissions from Lime Kilns are typically controlled by a wet scrubber and/or low sulfur fuel oil, if firing fuel oil as a supplemental fuel. Little information is provided for SO_2 emissions in the

RBLC. The SO_2 entries are typically provided in units of "lb/hr" and range from 6.49 lb/hr for the IP Pensacola Mill entry to 41.6 lb/hr.

6.4.3.1 Proposed BACT for Sulfur Dioxides

The Pensacola Mill proposes that BACT for SO_2 for the Lime Kiln/Mud Dryer be use of the wet scrubber and a limit of 6.49 lb/hr. This value represents approximately 95% control of the SO_2 emitted from the process.

IP has also reviewed the option of switching to a lower sulfur fuel. The typical current fuel oil that the Mill burns is No. 6 Fuel Oil with a sulfur content around 1%. IP developed a cost analysis reviewing the feasibility of using 0.5% S No. 2 Fuel Oil. IP conservatively excluded the capital costs associated with the installation of a fuel oil storage tank and associated equipment since these capital costs had been included with the Recovery Furnace cost analysis in Section 6.3.3 (i.e., the fuel oil system supporting the Recovery Furnaces could potentially be used for distributing fuel to the Lime Kiln/Mud Dryer). The analysis demonstrated that switching to a lower sulfur fuel (from 1% to 0.5% S) is not cost effective for the IP Lime Kiln/Mud Dryer. The cost analysis is included in Appendix C (see Table C-22). IP also looked at the feasibility of 0.1% S No. 2 Fuel Oil and found that the additional reduction in SO_2 emissions does not compensate for the higher fuel cost and the cost analysis results in a higher cost (on a $/ton of SO_2 removed basis) than the analysis provided in Table C-22.

6.4.4 BACT for Carbon Monoxide

CO emissions from Lime Kilns generally result from incomplete combustion of the organic constituents in the fuel.

Using the top-down approach to identifying a BACT level of control, IP ranks the controls in the following order:

1. Oxidation
2. Combustion Control

6.4.4.1 Control Alternatives

Oxidation

The same discussion presented in Subsection 6.3.4.1 above regarding CO emissions from recovery furnaces is applicable to CO emissions from Lime Kilns. Therefore, both thermal and catalytic oxidation are technically infeasible for application on Lime Kilns.

Combustion Control

CO emissions from Lime Kilns result from incomplete combustion of the organic constituents of the fuel. Increasing residence time, oxygen, turbulence, and temperature may minimize CO emissions. However, these strategies must be carefully controlled since individually and in aggregate, they act to increase the formation of NO_2.

6.4.4.2 Proposed Carbon Monoxide BACT

A summary of the CO data obtained from the RBLC search is identified in Table C-11. CO concentrations reflective of BACT identified on the RBLC range from 45 ppmdv @ 10% O_2 to 80 ppmdv @ 10% O_2. Several determinations are expressed as lbs. CO/hr and range from 2.0 to 50 lbs. CO/hr. The required control technology in all cases was proper design, operation, and control of the combustion process. Increasing residence time, oxygen, turbulence, and temperature can reduce CO emissions from Lime Kiln operations. However, these strategies act to increase the formation of NO_2.

Consistent with previous BACT determinations presented in Table C-11, BACT for CO emissions from Lime Kilns Mud Dryer is the proper design, operation, and control of the combustion process and the current emission levels that were determined from the 1991 BACT analysis (CO concentration of 45 ppmdv @ 10% O_2).

6.4.5 BACT for Volatile Organic Compounds

VOC emissions from Lime Kilns generally result from incomplete combustion of the organic constituents in the fuel and from any residual VOC carried into the kiln with the lime mud.

6.4.5.1 Control Alternatives

Based on the results of the RBLC search presented in Table C-12, add-on abatement systems to control VOC emissions from Lime Kilns have not been required as BACT. Most determinations relate to the proper design and operation of the kiln and good combustion control. VOC, CO, and NO_X are interrelated and are greatly impacted by furnace design and the combustion conditions within the furnace. Lime kiln exhaust streams are generally very wet (saturated) with relatively high particulate loadings, even after particulate matter control systems making typical VOC control equipment infeasible from a practical stand point.

6.4.5.2 Proposed BACT for Volatile Organic Compounds

Consistent with the recent determinations presented in Table C-12 and the values that IP has proposed for CO and NO_X, IP proposes that BACT for VOC emissions from the Lime Kiln/Mud Dryer is the proper design and operation of the kiln and the current emission levels that were determined from the 1991 BACT analysis (VOC concentration of 104 ppmdv @ 10% O_2).

6.4.6 BACT for Total Reduced Sulfur Compounds

A summary of the TRS data obtained from the RBLC search is identified in Table C-13. TRS emissions from Lime Kilns are typically controlled by proper kiln design, operation and process controls (i.e., control of the gas exit O_2 concentration and cold end temperature). The TRS entries are typically provided in units of ppmdv @ 10% O_2.

6.4.6.1 Proposed BACT for Total Reduced Sulfur Compounds

The Pensacola Mill proposes that BACT for TRS for the Lime Kiln/Mud Dryer be proper design, operation, and process controls of the kiln and the current emission levels that were determined from the 1991 BACT analysis (TRS concentration of 8 ppmdv @ 10% O_2).

6.5 KAMYR DIGESTER SYSTEM AND NO. 2 MULTIPLE EFFECT EVAPORATOR SET BACT ANALYSIS

The only PSD-regulated pollutants emitted from the digester and evaporator systems are VOC and TRS. There are only RBLC entries for VOC and TRS from the Kamyr Digester System and TRS from the No. 2 Multiple Effect Evaporator Set. Therefore, a BACT analysis is required for these pollutants and their respective units. A search of entries for control determinations for Kraft pulp and paper mill digester systems, evaporator systems and NCG handling systems was performed using the RBLC and the CARB BACT Clearinghouse. The results of the searches are summarized in Tables C-14 throughC-16.

Three additional internet sites maintained by state regulatory agencies were identified and reviewed for BACT guidance and/or determinations pertaining to Kraft pulp and paper mills; however, none of the web sites contained any guidance or determinations pertaining to pulp and paper mill digester systems. Summaries of the VOC and TRS BACT evaluations are provided in the subsections below.

6.5.1 BACT for Volatile Organic Compounds and Total Reduced Sulfur Compounds

The control techniques identified in the EPA RBLC and the CARB BACT Clearinghouse for control of emissions from pulp mill digester systems, evaporator systems and NCG handling systems are routing the digester and evaporator NCGs to an add-on thermal oxidation unit or to other treatment units for thermal oxidation. The Mill currently collects the LVHC gases from the Kamyr Digester System and the No. 2 Multiple Effect Evaporator Set and controls them with the use of a dedicated Thermal Oxidizer.

6.5.1.1 Proposed BACT for Volatile Organic Compounds and Total Reduced Sulfur Compounds

Since the Mill will continue to control the emissions with the Thermal Oxidizer, and thermal oxidation is the most stringent VOC and TRS control technology available, no further technical or economic discussion is required. The Mill believes that collecting the Kamyr Digester System and the No. 2 Multiple Effect Evaporator Set gases and routing them to the Thermal Oxidizer for thermal oxidation constitutes BACT for VOC and TRS.

In addition, the NESHAP for pulp and paper mills (40 CFR Part 63, Subpart S) stipulates that controlling the Digester and Evaporator Systems and venting them to a closed-vent system routed to a treatment unit (e.g., thermal oxidizer) constitutes Maximum Achievable Control Technology (MACT). Since the control device satisfies the MACT requirements and meets the BACT level of control provided in the RBLC, the Mill believes that collection of the Kamyr Digester System and the No. 2 Multiple Effect Evaporator Set LVHC gases and thermal oxidation of these gases in the NCG incinerator or back-up system constitutes BACT for VOC and TRS.

6.6 LIME SLAKER BACT ANALYSIS

The only PSD-regulated pollutants emitted from the Lime Slaker are PM/PM_{10}, VOC and TRS. Therefore, a BACT analysis is required for these pollutants. IP reviewed the RBLC and found limited information and entries available for lime slakers. The Pensacola Mill Lime Slaker is equipped with a wet scrubber that is used primarily as a PM/PM_{10} control device.

6.6.1 BACT for PM/PM_{10}

A summary of the PM/PM_{10} data obtained from the RBLC search is provided in Table C-17. The control alternatives summarized include various wet scrubbers. PM/PM_{10} BACT levels are provided in terms of lb/hr and range from 0.73 – 12 lb/hr.

6.6.1.1 Proposed PM/PM_{10} BACT

IP believes that the current control configuration and use of a wet scrubber represents a BACT level of control. IP proposes to that BACT for PM/PM_{10} from the Lime Slaker is the application of a wet scrubber and meeting the existing 1.59 lb/hr limit.

6.6.2 BACT for Volatile Organic Compounds

A summary of the VOC data obtained from the RBLC search is provided in Table C-18. There is one entry and it identifies a wet scrubber as the control alternatives. The VOC BACT level is provided as 3.8 lb/hr.

6.6.2.1 Proposed Volatile Organic Compound BACT

IP believes that the current control configuration represents BACT level of control. IP proposes to that BACT for VOC from the Lime Slaker is the application of a wet scrubber and establishing a new emission limit as the unit is not currently regulated for VOC. IP recently completed an engineering study examining an alternative Pulp and Paper Industry MACT I, Phase II compliance strategy (i.e., the clean condensate alternative). IP data suggests that VOC emissions (measured using EPA Method 25A and reported as C) from the Pensacola Mill Lime Slaker scrubber would be consistent with the previous BACT determination of 3.8 lb/hr. IP proposes a new BACT limit of 3.8 lb/hr.

6.6.3 BACT for Total Reduced Sulfur Compounds

A summary of the PM/PM_{10} data obtained from the RBLC search is provided in Table C-19. The control alternatives include the use of a wet scrubber and venting of the gas stream to an NCG control device. TRS BACT levels are provided in terms of 0.14 lb/hr for the wet scrubber and an outlet concentration of 5 ppmdv for the NCG Incinerator/Lime Kiln.

6.6.3.1 Proposed Total Reduced Sulfur BACT

IP believes that the current control configuration represents BACT level of control. IP proposes to that BACT for TRS from the Lime Slaker is the application of a wet scrubber and establishing a new emission limit. . IP reviewed the available NCASI data and utilized an emission factor from NCASI Technical Bulletin 849. To be conservative, IP included a 20% safety factor on the emission factor (0.054 lb/ton CaO) to establish a new 1.3 lb/hr limit.

6.7 POST O_2 PRESS BACT ANALYSIS

The only PSD-regulated pollutants emitted from the Post O_2 Press are VOC and TRS. Therefore, a BACT analysis is required for these pollutants. IP reviewed the RBLC and found that there are no entries available for post oxygen presses. As a result, the current BACT analysis defines BACT as no control.

6.7.1 BACT for Volatile Organic Compounds

IP reviewed the readily available industry databases and identified units similar to the proposed IP Post O_2 Press that have test data for VOCs. The average VOC test data (from NCASI TB 675, Mill N) is 0.075 lb/ADTBP, reported as C from Method 25A.

6.7.1.1 Proposed Volatile Organic Compound BACT

IP believes that the current control configuration represents a BACT level of control. IP reviewed the available NCASI data and utilized an emission factor from NCASI Technical Bulletin 675. To be conservative, IP included a 20% safety factor on the emission factor (0.091 lb/ton ADTBP) to establish a new 3.6 lb/hr limit.

6.7.2 BACT for Total Reduced Sulfur Compounds

IP reviewed the readily available industry databases and identified units similar to the proposed IP Post O_2 Press that have test data for TRS. The average TRS test data (from NCASI TB 849, Mill N) is 0.0045 lb/ADTBP.

6.7.2.1 Proposed Total Reduced Sulfur BACT

IP believes that the current control configuration represents BACT level of control. As discussed above, IP will collect and treat this gas stream as part of the MACT I, Phase II efforts. Currently, IP proposes to that BACT for TRS from the Post O_2 Press is no control. IP reviewed the available NCASI data and utilized an emission factor from NCASI Technical Bulletin 849. To be conservative, IP included a 20% safety factor on the emission factor (0.0054 lb/ton ADTBP) to establish a new 0.21 lb/hr limit until the unit is collected and treated as part of MACT I, Phase II.

III. EMISSIONS UNIT INFORMATION

A separate Emissions Unit Information Section (including subsections A through J as required) must be completed for each emissions unit addressed in this Application for Air Permit. If submitting the application form in hard copy, indicate, in the space provided at the top of each page, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application.

A. GENERAL EMISSIONS UNIT INFORMATION
(All Emissions Units)

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in This Section: (Check one)

[*X*] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

[ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Regulated or Unregulated Emissions Unit? (Check one)

[*X*] The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

[ ] The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

3. Description of Emissions Unit Addressed in This Section (limit to 60 characters):
P4 Pulp Dryer

4. Emissions Unit Identification Number: [*066*] No ID
ID: [ ] ID Unknown

5. Emissions Unit Status Code:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
A	*1951*	*26*	[*No*]

9. Emissions Unit Comment: (Limit to 500 Characters)

Emissions Unit Control Equipment

1. Control Equipment/Method Description (Limit to 200 characters per device or method): *N/A*	
2. Control Device or Method Code(s): *NA*	

Emissions Unit Details

1. Package Unit: Manufacturer: ***Bagley Sewell / Beloit***	Model Number: *NA*
2. Generator Nameplate Rating: *NA*	MW
3. Incinerator Information: Dwell Temperature: *NA* Dwell Time: *NA* Incinerator Afterburner Temperature: *NA*	 °F seconds °F

B. EMISSIONS UNIT CAPACITY INFORMATION
(Regulated Emissions Units Only)

Emissions Unit Operating Capacity and Schedule

1. Maximum Heat Input Rate: *NA*		mmBtu/hr
2. Maximum Incineration Rate: *NA*	lb/hr	tons/day
3. Maximum Process or Throughput Rate: ***800 Tons/day (various pulp and paper grades)***		
4. Maximum Production Rate: *NA*		
5. Requested Maximum Operating Schedule:	*24* hours/day	*7* days/week
	52 weeks/year	*8760* hours/year
6. Operating Capacity/Schedule Comment (limit to 200 characters): The capacity of the P4 machine is dependent on the grade of pulp or paper product being produced. The production rate of 800 tpd is based on a light basis weight product that allows the greatest machine speed and highest theoretical production.		

C. EMISSIONS UNIT REGULATIONS
(Regulated Emissions Units Only)

List of Applicable Regulations

See Section 5 of the attached application narrative	

D. EMISSION POINT (STACK/VENT) INFORMATION
(Regulated Emissions Units Only)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram?	2. Emission Point Type Code: *NA*	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking (limit to 100 characters per point): ***Unit has fourteen similar, direct discharge points with the dimensions listed below and areas where fugitive VOC emissions may be emitted.***		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:		
5. Discharge Type Code: ***V, R, F***	6. Stack Height: ***50*** feet	7. Exit Diameter: ***5*** feet
8. Exit Temperature: ***Ambient*** °F	9. Actual Volumetric Flow Rate: *NA*	10. Water Vapor: *NA* %
11. Maximum Dry Standard Flow Rate: *NA* dscfm	12. Nonstack Emission Point Height: *NA* feet	
13. Emission Point UTM Coordinates: Zone: East (km): North (km):		
14. Emission Point Comment (limit to 200 characters):		

E. SEGMENT (PROCESS/FUEL) INFORMATION
(All Emissions Units)

Segment Description and Rate: Segment *1* of *1*

1. Segment Description (Process/Fuel Type) (limit to 500 characters): ***pulp***		
2. Source Classification Code (SCC): ***3-07-004-05***	3. SCC Units: ***NA***	
4. Maximum Hourly Rate: ***33.3 tons***	5. Maximum Annual Rate: ***292,000 tons***	6. Estimated Annual Activity Factor: ***NA***
7. Maximum % Sulfur: ***NA***	8. Maximum % Ash: ***NA***	9. Million Btu per SCC Unit: ***NA***
10. Segment Comment (limit to 200 characters):		

Segment Description and Rate: Segment _____ of _____

1. Segment Description (Process/Fuel Type) (limit to 500 characters):		
2. Source Classification Code (SCC):	3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment (limit to 200 characters):		

F. EMISSIONS UNIT POLLUTANTS
(All Emissions Units)

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
VOC			*NS*
HAP			*NS*

G. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION
(Regulated Emissions Units -
Emissions-Limited and Preconstruction Review Pollutants Only)

Potential/Fugitive Emissions ***See Section 4 of the attached application narrative***

1. Pollutant Emitted: ***VOC***	2. Total Percent Efficiency of Control: ***N/A***
3. Potential Emissions: lb/hour ***17.5*** tons/year	4. Synthetically Limited? [ ]
5. Range of Estimated Fugitive Emissions: [ ] 1 [ ] 2 [ ] 3 ______ to ______ tons/year	
6. Emission Factor: ***0.12 lb/ADTFP*** Reference: ***NCASI Technical Bulletin 681***	7. Emissions Method Code: ***5***
8. Calculation of Emissions (limit to 600 characters): ***0.12 lb/ADTFP x 800 ADTPF/day x 365 days/year / 2000 lb/ton = 17.5 tons/year***	
9. Pollutant Potential/Fugitive Emissions Comment (limit to 200 characters):	

Allowable Emissions Allowable Emissions *1* of *1* - ***see Section 5 of the attached application narrative***

1. Basis for Allowable Emissions Code: ***NA***	2. Future Effective Date of Allowable Emissions:
3. Requested Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance (limit to 60 characters):	
6. Allowable Emissions Comment (Desc. of Operating Method) (limit to 200 characters):	

H. VISIBLE EMISSIONS INFORMATION
(Only Regulated Emissions Units Subject to a VE Limitation)

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: *NA*	2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Requested Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment (limit to 200 characters):	

I. CONTINUOUS MONITOR INFORMATION
(Only Regulated Emissions Units Subject to Continuous Monitoring)

Continuous Monitoring System: Continuous Monitor 1 of 1

1. Parameter Code: *NA*	2. Pollutant(s):
3. CMS Requirement:	[ ] Rule [ ] Other
4. Monitor Information: Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment (limit to 200 characters):	

J. EMISSIONS UNIT SUPPLEMENTAL INFORMATION
(Regulated Emissions Units Only)

Supplemental Requirements

1. Process Flow Diagram [*X*] Attached, Document ID:________ [ ] Not Applicable [ ] Waiver Requested ***See Section 2 of the attached application narrative***
2. Fuel Analysis or Specification [ ] Attached, Document ID:________ [*X*] Not Applicable [ ] Waiver Requested
3. Detailed Description of Control Equipment [ ] Attached, Document ID:________ [*X*] Not Applicable [ ] Waiver Requested
4. Description of Stack Sampling Facilities [ ] Attached, Document ID:________ [*X*] Not Applicable [ ] Waiver Requested
5. Compliance Test Report [ ] Attached, Document ID:________ [ ] Previously submitted, Date:______________ [*X*] Not Applicable
6. Procedures for Startup and Shutdown [ ] Attached, Document ID:________ [*X*] Not Applicable [ ] Waiver Requested ***P4 Pulp Dryer Startup and Shutdown Procedures are maintained on-site in the Control Rooms and the Environmental Office.***
7. Operation and Maintenance Plan [ ] Attached, Document ID:________ [*X*] Not Applicable [ ] Waiver Requested ***Mill Operation and Maintenance Plans are maintained on-site and are available for agency review.***
8. Supplemental Information for Construction Permit Application [*X*] Attached, Document ID:________ [ ] Not Applicable ***See attached application narrative***
9. Other Information Required by Rule or Statute [ ] Attached, Document ID:________ [*X*] Not Applicable
10. Supplemental Requirements Comment:

Additional Supplemental Requirements for Title V Air Operation Permit Applications

11. Alternative Methods of Operation [ ] Attached, Document ID:________ [X] Not Applicable
12. Alternative Modes of Operation (Emissions Trading) [ ] Attached, Document ID:________ [X] Not Applicable
13. Identification of Additional Applicable Requirements [ ] Attached, Document ID:________ [X] Not Applicable
14. Compliance Assurance Monitoring Plan [ ] Attached, Document ID:________ [X] Not Applicable
15. Acid Rain Part Application (Hard-copy Required) [ ] Acid Rain Part - Phase II (Form No. 62-210.900(1)(a)) Attached, Document ID:________ [ ] Repowering Extension Plan (Form No. 62-210.900(1)(a)1.) Attached, Document ID:________ [ ] New Unit Exemption (Form No. 62-210.900(1)(a)2.) Attached, Document ID:________ [ ] Retired Unit Exemption (Form No. 62-210.900(1)(a)3.) Attached, Document ID:________ [ ] Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.) Attached, Document ID:________ [ ] Phase NOx Averaging Plan (Form No. 62-210.900(1)(a)5.) Attached, Document ID:________ [X] Not Applicable

APPLICATION INFORMATION

1.	Professional Engineer Name: William Straub Registration Number: 59838
2.	Professional Engineer Mailing Address... Organization/Firm: All4 Inc. Street Address: 2393 Kimberton Road, Suite 100, P.O. Box 299 City: Kimberton State: PA Zip Code: 19442
3.	Professional Engineer Telephone Numbers... Telephone: (610) 933-5246 ext.12 Fax: (610) 933-5127
4.	Professional Engineer Email Address: wstraub@all4inc.com

5. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

(3) If the purpose of this application is to obtain a Title V air operation permit (check here ☐, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.

(4) If the purpose of this application is to obtain an air construction permit (check here ☒, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here ☐, if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here ☐, if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

[signature] 1/18/05

Signature Date

(seal) ***see exception language***

WILLIAM H. STRAUB, CERTIFICATE NO. 59838, STATE OF FLORIDA, PROFESSIONAL ENGINEER

* Attach any exception to certification statement.

As an independent professional engineer and air quality consultant, my responsibilities with this project included the following:

- review and recommendation of air pollution control strategy;
- qualification and quantification of emissions of regulated air pollutants;
- identification of permitting approach; and
- development of the PSD permit application.

IP engineering personnel and emission unit/air pollution control device vendors have lead the design and engineering modifications to the emissions units and associated air pollution control equipment. IP staff are not under my direct supervision. I reviewed the data to the extent that it relates to applicable air quality regulatory and permitting requirements and found it to be in conformity with sound engineering principles applicable to the control of emissions of air pollutants.

Signature

1/18/05

Date

TABLE B-7 (Revised January 2005)
IP PENSACOLA MILL
PRELIMINARY EMISSIONS INVENTORY
PSD APPLICABILITY ANALYSIS

LIME SLAKER

POLLUTANT		BASELINE EMISSIONS[a] 2002/2001 Average (tons/yr)	PTE EMISSION Emission Factor[b]	Units	Source	Production[c]	Units	Emissions (tons/yr)	PROJECT-RELATED EMISSIONS INCREASE (tons/yr)
CO		0.00						0.00	0.00
NO_X		0.00						0.00	0.00
PM		3.86	1.59	lb/hr	BACT - Permit Limit	8760	hours/yr	6.96	3.10
PM_{10}		3.86	1.59	lb/hr	BACT - Permit Limit	8760	hours/yr	6.96	3.10
SO_2		0.00						0.00	0.00
TRS	(d)	3.42	0.054	lb/ton CaO	BACT - NCASI TB 849 (average of 4 slaker vents) plus 20% safety factor	24.06	tons CaO/hr	5.69	2.27
VOC	(d)	3.12	0.049	lb/ton CaO	BACT - NCASI TB 676 plus 20% safety factor	24.06	tons CaO/hr	5.20	2.08
H_2SO_4 Mist								0.00	0.00

[a] Baseline emissions were developed from the Annual Emission Inventories submitted by the mill.
[b] Existing Permit Limits for PM (1.59 lb/hr). All other emission factors were developed from the historical mill data.
[c] Production values that have been corrected to the future scenario values.
[d] Pollutant not reported in EAOR. Value developed using a NCASI emission factor (as presented below) and actual 1998/1999 production data. PTE values developed represent a BACT determination. IP has included a 20% safety factor due to the limited data available and the fact that the value will be a permit limit.

<u>Key Information:</u>

Baseline Scenario

Emission Characteristics: NA

TRS	0.045	lb/ton CaO	NCASI TB 849
VOC	0.0411	lb/ton CaO	NCASI TB 676

Production Characteristics: 151,949 tons CaO/yr — 2002/2001 Average

Future Scenario

Emission Characteristics: 1.59 lb PM/hr — Permit Limit

Production Characteristics: 24.06 tons CaO/hr — Future lime production based on 1650 ADBT/day and 700 lb CaO/ADBT

TABLE B-14 (New January 2005)
IP PENSACOLA MILL
PRELIMINARY EMISSIONS INVENTORY
PSD APPLICABILITY ANALYSIS

P4 Paper Machine

POLLUTANT		BASELINE EMISSIONS[a] 2002/2001 Average (tons/yr)	PTE EMISSION Emission Factor[b]	Units	Source	Production[c]	Units	Emissions (tons/yr)	PROJECT-RELATED EMISSIONS INCREASE (tons/yr)
CO								0.00	0.00
NO_X								0.00	0.00
PM								0.00	0.00
PM_{10}								0.00	0.00
SO_2								0.00	0.00
TRS								0.00	0.00
VOC	(d)	8.08	0.120	lb/ADTFP	NCASI TB 681 plus 20% safety factor	800	ADTFP/day	17.52	9.44
H_2SO_4 Mist								0.00	0.00

[a] Baseline emissions were developed from the Annual Emission Inventories submitted by the mill.
[b] Emission factor developed from NCASI TB 681. Production was developed by taking 1/3 of the total Mill production.
[c] Production values that have been corrected to the future scenario values and use the conversion factor of 1.1 ADTBP/1 ODTBP.
[d] Pollutant not reported in EAOR. Value developed using a NCASI emission factor (as presented below) and actual total 2002/2001 production data. PTE values developed represent a BACT determination. IP has included a 20% safety factor due to the limited data available.

Key Information:

Baseline Scenario

Emission Characteristics: NA

VOC 0.1 lb/ADTFP NCASI TB 681

Production Characteristics: 485,046 ADTBP/yr 2002/2001 Average

Future Scenario

Emission Characteristics: 0.12 lb/ADTFP NCASI TB 681 plus 20% safety factor

Production Characteristics: 800.00 ADTFP/day Future Pulp production

TABLE B-15 (New January 2004)
IP PENSACOLA MILL
PRELIMINARY EMISSIONS INVENTORY
PSD APPLICABILITY ANALYSIS

ERCO ClO2 Generator

POLLUTANT		BASELINE EMISSIONS[a] 2002/2001 Average (tons/yr)	PTE EMISSION Emission Factor[b]	Units	Source	Production[c]	Units	Emissions (tons/yr)	PROJECT-RELATED EMISSIONS INCREASE (tons/yr)
CO								0.00	0.00
NO_X								0.00	0.00
PM								0.00	0.00
PM_{10}								0.00	0.00
SO_2								0.00	0.00
TRS								0.00	0.00
VOC	(d)	4.43	0.020	lb/ODTUBP	NCASI TB 884 plus 20% safety factor	1500.00	ODTUBP/day	5.48	1.04
H_2SO_4 Mist								0.00	0.00

[a] Baseline emissions were developed from the Annual Emission Inventories submitted by the mill.
[b] Emission factor developed from NCASI TB 884.
[c] Production values that have been corrected to the future scenario values and use the conversion factor of 1.1 ADTBP/1 ODTBP.
[d] Pollutant not reported in EAOR. Value developed using a NCASI emission factor (as presented below) and actual total 2002/2001 production data. PTE values developed represent a BACT determination. IP has included a 20% safety factor due to the limited data available.

Key Information:

Baseline Scenario

Emission Characteristics: NA

VOC 0.017 lb/ODTUBP NCASI TB 884

Production Characteristics: 521,512 ODTUBP/yr Total Facility 2002/2001 Average ODTUBP value

Future Scenario

Emission Characteristics: 0.020 lb/ODTUBP NCASI TB 884 plus a 20% safety factor

Production Characteristics: 1500.00 ODTUBP/day Future production rate of 1650 ADBT/day

Table C-20
International Paper Company - Pensacola Mill
Total Capital Investment[(a)] for a New Oil Storage Tank and Fuel Delivery System for the Nos. 1 and 2 Recovery Furnaces - 0.1% S Fuel Oil

Cost Item	Cost Factor	Cost
Direct Costs		
Purchased Equipment Costs		
Skid Mounted Control System[(b)]		$400,000
Oil Storage Tank and Auxiliary Equipment[(c)]		$150,000
Sum = A	A	$550,000
Instrumentation	0.10 A	--[(d)]
Sales Tax	0.06 A	$33,000
Freight	0.05 A	$27,500
Purchased Equipment Cost = B	B	$610,500
Direct Installation Costs		
Foundation and Supports	0.04 B	--[(d)]
Handling and Erection	0.50 B	$305,250
Electrical	0.08 B	$48,840
Piping	0.01 B	--[(d)]
Insulation for Ductwork	0.07 B	$42,735
Painting	0.04 B	$24,420
Direct Installation Costs		$421,245
Site Preparation		$0
Facilities and Buildings		$0
	Total Direct Cost	**$1,031,745**
Indirect Costs (Installation)		
Engineering	0.10 B	$61,050
Construction and Field Expenses	0.20 B	$122,100
Contractor Fees	0.10 B	$61,050
Start-up	0.01 B	$6,105
Performance Test	0.01 B	$6,105
Contingencies	0.03 B	$18,315
	Total Indirect Cost	**$274,725**
Total Capital Investment [TCI] (rounded)		**$1,306,470**

(a) Capital Cost estimated using budgetary data from IP Engineers and procedures published in the EPA OAQPS Control Cost Manual, Chapter 5, Fifth Edition, EPA 453/B-96-001, February 1996.
(b) The Skid Mounted Control System would include the heat exchanges, pumps, heat tracing, control valves, burner management system, etc.
(c) The Oil Storage Tank and Auxiliary Equipment would include the metal tank, ground grid, foundation, spill control (concrete containment), piping, instrumentation, heat tracing, filters and manual valves.
(d) These costs have been included in the budgetary estimates provided by IP Engineers.

Table C-20 (continued)
International Paper Company - Pensacola Mill
Total Capital Investment[a] for a New Oil Storage Tank and Fuel Delivery System for the Nos. 1 and 2 Recovery Furnaces - 0.1% S Fuel Oil

Cost Item	Calculations							Cost
Direct Annual Costs, DC								
Operating Labor								
Operator	1 hr/shift	×	3 shift/day	×	365 day/yr	×	$20.00 /hr	$21,900
Supervisor	15% of operator labor =		0.15	×	$21,900			$3,285
Maintenance								
Labor	1 hr/shift	×	3 shift/day	×	365 day/yr	×	$30.00 /hr	$32,850
Materials (parts, etc.)	100% of maintenance labor =		1.00	×	$32,850			$32,850
Utilities								
Baseline Fuel Oil Cost (1% S)[b]	5.78 $/MMBtu	x	439,971 MMBtu/yr				$ 2,543,032	
Future Fuel Oil Cost (0.1% S)[b]	7.5 $/MMBtu	×	1,702,272 MMBtu/yr				$ 12,767,040	
							Cost Differential:	$10,224,008
Total DC								**$10,314,893**
Indirect Annual Costs, IC								
Overhead	60% of sum of operating, suprv., and maint. labor, & maint. materials							$54,531
Administrative Charges	2% of Total Capital Investment							$26,129
Property Tax	1% of Total Capital Investment							$13,065
Insurance	1% of Total Capital Investment							$13,065
Capital Recovery[d]	7% interest rate,		10 year equipment life			CRF =	0.142377503	$186,012
Total IC								**$292,802**
Total Annual Cost (rounded)								**$10,607,690**

Potential to Emit SO_2 - Baseline [c]:	225 ton/yr
Potential to Emit SO_2 at 0.1% S Distillate Fuel Oil - Future [d]:	95 ton/yr
Ton of SO_2 Controlled:	129 ton/yr
Cost per ton of Pollutant Controlled: $	**82,078**

[a] Annual operating costs estimated using procedures published in the EPA OAQPS Control Cost Manual, Fifth Edition, EPA 453/B-96-001, February 1996.

[b] Fuel costs based on November 2004 data from IP Purchasing and Radcliff Economy. The Cost Differential represents the differential in cost between the Baseline Scenario of No. 6 Fuel Oil (1% S) with the remainder of the heat input based on Natural Gas. The Future Scenario is based on No. 2 Fuel Oil (0.1% S). The total heat input is based on 572 MMBtu/hr operating for 62 days per year for each Recovery Furnace (1,702,272 MMBtu/yr).

[c] Baseline SO2 emissions are based on the permit limit of 151 lb/hr, 62 days of operation on oil per year, 24 hours per day, and two recovery furnaces.

[d] Future Scenario SO2 emissions are based on 0.1% S No. 2 Fuel Oil, 572 MMBtu/hr from oil firing, 140,000 Btu/gal, 62 days of operation per year, 24 hours per day, and two recovery furnaces.

[e] Capital recovery = CRF * [TCI]

Table C-21
International Paper Company - Pensacola Mill
Total Capital Investment[a] for a New Oil Storage Tank and Fuel Delivery System
for the Nos. 1 and 2 Recovery Furnaces - 0.05% S Fuel Oil

Cost Item	Cost Factor	Cost
Direct Costs		
Purchased Equipment Costs		
Skid Mounted Control System[b]		$400,000
Oil Storage Tank and Auxiliary Equipment[c]		$150,000
Sum = A	A	$550,000
Instrumentation	0.10 A	--[d]
Sales Tax	0.06 A	$33,000
Freight	0.05 A	$27,500
Purchased Equipment Cost = B	B	$610,500
Direct Installation Costs		
Foundation and Supports	0.04 B	--[d]
Handling and Erection	0.50 B	$305,250
Electrical	0.08 B	$48,840
Piping	0.01 B	--[d]
Insulation for Ductwork	0.07 B	$42,735
Painting	0.04 B	$24,420
Direct Installation Costs		$421,245
Site Preparation		$0
Facilities and Buildings		$0
	Total Direct Cost	**$1,031,745**
Indirect Costs (Installation)		
Engineering	0.10 B	$61,050
Construction and Field Expenses	0.20 B	$122,100
Contractor Fees	0.10 B	$61,050
Start-up	0.01 B	$6,105
Performance Test	0.01 B	$6,105
Contingencies	0.03 B	$18,315
	Total Indirect Cost	**$274,725**
Total Capital Investment [TCI] (rounded)		**$1,306,470**

[a] Capital Cost estimated using budgetary data from IP Engineers and procedures published in the EPA OAQPS Control Cost Manual, Chapter 5, Fifth Edition, EPA 453/B-96-001, February 1996.
[b] The Skid Mounted Control System would include the heat exchanges, pumps, heat tracing, control valves, burner management system, etc.
[c] The Oil Storage Tank and Auxiliary Equipment would include the metal tank, ground grid, foundation, spill control (concrete containment), piping, instrumentation, heat tracing, filters and manual valves.
(d) These costs have been included in the budgetary estimates provided by IP Engineers.

Table C-21 (continued)
International Paper Company - Pensacola Mill
Total Capital Investment[a] for a New Oil Storage Tank and Fuel Delivery System
for the Nos. 1 and 2 Recovery Furnaces - 0.05% S Fuel Oil

Cost Item	Calculations	Cost
Direct Annual Costs, DC		
Operating Labor		
Operator	1 hr/shift × 3 shift/day × 365 day/yr × $20.00 /hr	$21,900
Supervisor	15% of operator labor = 0.15 × $21,900	$3,285
Maintenance		
Labor	1 hr/shift × 3 shift/day × 365 day/yr × $30.00 /hr	$32,850
Materials (parts, etc.)	100% of maintenance labor = 1.00 × $32,850	$32,850
Utilities		
Baseline Fuel Oil Cost (1% S)[b]	5.78 $/MMBtu x 439,971 MMBtu/yr = $ 2,543,032	
Future Fuel Oil Cost (0.1% S)[b]	9.86 $/MMBtu × 1,702,272 MMBtu/yr = $ 16,784,402	
	Cost Differential:	$14,241,370
Total DC		**$14,332,255**
Indirect Annual Costs, IC		
Overhead	60% of sum of operating, suprv., and maint. labor, & maint. materials	$54,531
Administrative Charges	2% of Total Capital Investment	$26,129
Property Tax	1% of Total Capital Investment	$13,065
Insurance	1% of Total Capital Investment	$13,065
Capital Recovery[d]	7% interest rate, 10 year equipment life CRF = 0.142377503	$186,012
Total IC		**$292,802**
Total Annual Cost (rounded)		**$14,625,060**

Potential to Emit SO_2 - Baseline [c]:	225 ton/yr
Potential to Emit SO_2 at 0.05% S Distillate Fuel Oil - Future [d]:	48 ton/yr
Ton of SO_2 Controlled:	177 ton/yr
Cost per ton of Pollutant Controlled:	**$ 82,644**

(a) Annual operating costs estimated using procedures published in the EPA OAQPS Control Cost Manual, Fifth Edition, EPA 453/B-96-001, February 1996.

(b) Fuel costs based on November 2004 data from IP Purchasing and Radcliff Economy. The Cost Differential represents the differential in cost between the Baseline Scenario of No. 6 Fuel Oil (1% S) with the remainder of the heat input based on Natural Gas. The Future Scenario is based on No. 2 Fuel Oil (0.05% S). The total heat input is based on 572 MMBtu/hr operating for 62 days per year for each Recovery Furnace (1,702,272 MMBtu/yr).

(c) Baseline SO2 emissions are based on the permit limit of 151 lb/hr, 62 days of operation on oil per year, 24 hours per day, and two recovery furnaces.

(d) Future Scenario SO2 emissions are based on 0.05% S No. 2 Fuel Oil, 572 MMBtu/hr from oil firing, 140,000 Btu/gal, 62 days of operation per year, 24 hours per day, and two recovery furnaces.

(e) Capital recovery = CRF * [TCI]

Table C-22
International Paper Company - Pensacola Mill
Total Capital Investment[a] for a New Oil Storage Tank and Fuel Delivery System
for the Lime Kiln/Mud Dryer - 0.5% S Fuel Oil

Cost Item	Cost Factor	Cost	
Direct Costs			
Purchased Equipment Costs			
Skid Mounted Control System		$0	
Oil Storage Tank and Auxiliary Equipment		$0	
Sum = A	A	$0	
Instrumentation	0.00 A	$0	
Sales Tax	0.00 A	$0	
Freight	0.00 A	$0	
Purchased Equipment Cost = B	B	$0	
Direct Installation Costs			
Foundation and Supports	0.00 B	$0	
Handling and Erection	0.00 B	$0	
Electrical	0.00 B	$0	
Piping	0.00 B	$0	
Insulation for Ductwork	0.00 B	$0	
Painting	0.00 B	$0	
Direct Installation Costs		$0	
Site Preparation		$0	
Facilities and Buildings		$0	
	Total Direct Cost	**$0**	
Indirect Costs (Installation)			
Engineering	0.00 B	$0	
Construction and Field Expenses	0.00 B	$0	
Contractor Fees	0.00 B	$0	
Start-up	0.00 B	$0	
Performance Test	0.00 B	$0	
Contingencies	0.00 B	$0	
	Total Indirect Cost	**$0**	
Total Capital Investment [TCI] (rounded)		**$0**	**$0**

[a] Please note: IP has included the cost of the Oil Storage Tank and Auxiliary Equipment with the Recovery Furnace Analysis and there is no Capital Investment associated with this project. The first page of Table 1 is provided for completeness purposes only.

Table C-22 (continued)
International Paper Company - Pensacola Mill
Total Capital Investment[a] for a New Oil Storage Tank and Fuel Delivery System
for the Lime Kiln/Mud Dryer - 0.5% S Fuel Oil

Cost Item	Calculations							Cost
Direct Annual Costs, DC								
Operating Labor								
Operator	0.5 hr/shift	×	3 shift/day	×	365 day/yr	×	$20.00 /hr	$10,950
Supervisor	15% of operator labor =		0.15 × $10,950					$1,643
Maintenance								
Labor	0.5 hr/shift	×	3 shift/day	×	365 day/yr	×	$30.00 /hr	$16,425
Materials (parts, etc.)	100% of maintenance labor =		1.00 × $16,425					$16,425
Utilities								
Baseline Fuel Oil Cost (1% S)[b]	5.78 $/MMBtu	x	1,314,000 MMBtu/yr				$ 7,594,920	
Future Fuel Oil Cost (0.5% S)[b]	5.97 $/MMBtu	×	1,314,000 MMBtu/yr				$ 7,844,580	
							Cost Differential:	$249,660
Total DC								**$295,103**
Indirect Annual Costs, IC								
Overhead	60% of sum of operating, suprv., and maint. labor, & maint. materials							$27,266
Administrative Charges	2% of Total Capital Investment							$0
Property Tax	1% of Total Capital Investment							$0
Insurance	1% of Total Capital Investment							$0
Capital Recovery	7% interest rate,		10 year equipment life			CRF =	0.142377503	$0
Total IC								**$27,266**
Total Annual Cost (rounded)								**$322,370**

Potential to Emit SO_2 - Baseline [c]:	28.4 ton/yr
Potential to Emit SO_2 at 0.5% S Distillate Fuel Oil - Future [d]:	14.6 ton/yr
Ton of SO_2 Controlled:	14 ton/yr
Cost per ton of Pollutant Controlled: $	**23,279**

[a] Annual operating costs estimated using procedures published in the EPA OAQPS Control Cost Manual, Fifth Edition, EPA 453/B-96-001, February 1996.

[b] Fuel costs based on November 2004 data from IP Purchasing and Radcliff Economy. The Cost Differential represents the differential in cost between the Baseline Scenario of No. 6 Fuel Oil (1% S) and the Future Scenario is based on No. 2 Fuel Oil (0.1% S). The total heat input is based on 150 MMBtu/hr operating for 8760 hours per year.

[c] Baseline SO_2 emissions are based on the permit limit of 6.49 lb/hr. Using the AP-42 emission factors for fuel oil combustion, IP back-calculated a control efficiency associated with the scrubber as 95.76% of the uncontrolled emissions.

[d] Future Scenario SO_2 emissions are based on 0.5% S No. 2 Fuel Oil, 150 MMBtu/hr, 140,000 Btu/gal for No. 2 Fuel Oil, 8760 hours of operation and a control efficiency of 95.76%.

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Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary

October 8, 2004

CERTIFIED MAIL - Return Receipt Requested

Ms. Nicki S. Slusser, Mill Manager
International Paper Company
Pensacola Mill
375 Muscogee Road
Cantonment, Florida 32533-0087

Re: DEP File No. 0330042-008-AC/PSD-FL-335
Pensacola Mill
Pulp Production Increase

Dear Ms. Slusser:

The Department received the response to the incompleteness letters of August 9, 2003, and February 12, 2004, on September 9, 2004. The application received on August 1, 2003, requested an increase in pulp production from 1500 tons per day (TPD) air dried bleached tons pulp (ADBTP) to 1650 TPD ADBTP at the above referenced facility in Escambia County. Based on our review of the proposed project and supplemental information, we have determined that the following additional information is needed in order to continue processing this application package. Please provide all assumptions, calculations, and reference material(s), that are used or reflected in any of your responses.

1. The baseline years selected for the latest submittal was 2001-2002. Why did you not include the year 2003 and part of year 2004 for the evaluation? Rule 62-210.200, F.A.C., Definitions, describes "actual emissions" as "the average rate, in tons per year, at which the emissions unit actually emitted the pollutant during a two year period which precedes the particular date and which is representative of the normal operation of the emissions unit. The Department may allow the use of a different time period upon a determination that it is more representative of the normal operation of the emissions unit." Please submit either a justification for the years 2001-2002 for the baseline years or calculate and submit the actual emissions for the affected emissions units using the data for the time period that would include the year 2003 and part of year 2004; in addition, the same timeframe shall be required for evaluating the PSD increment.

2. Referring to the response to Question No. 4. of the request to additional information dated August 29, 2003 (RAI), a Table 1 was referred to "as attached to this letter", but doesn't seem to be attached. Please provide the table.

3. Regarding the usage of scrubbers on the Recovery Boilers (RBs) and potentially lower sulfur content fuel oil in the RBs (Nos. 1 and 2) and the Lime Kiln (LK), your answer to questions Nos. 4 and 5 of the RAI did not use the top down BACT approach. Therefore, please use the top down BACT approach to evaluate SO_2 BACT, which should include scrubber evaluation and the feasibility of using lower sulfur content fuel oil in the RBs and LK (current BACT for power boilers is 0.05%, by weight). Again, please evaluate the cost analysis on fuel oil with sulfur contents of 0.5, 0.1 and 0.05 percent, by weight.

4. Again, from the BACT table provided in the original submittal, the SO_2 value that is proposed as BACT for each of the RBs (151 lbs/hr) is not the lowest value listed and seems to be very high compared to their past actuals (66 lbs/hr for Unit 1 and 46 lbs/hr for Unit 2). In your response to Question No. 5 of the RAI, it appears that you are requesting the higher emission rate due to 100% operation on fossil fuels. As such, this method of operation would not be considered as a normal operation for a RB covered under 40 CFR 60, Subpart BB, and Rule 62-296.404, F.A.C. If you desire the RBs to be considered as fossil fuel fired boilers, then they need to be permitted as such; and, therefore, please provide the applicable requirements for this method of operation in the appropriate sections of the application form.

5. Again, from the BACT table provided in the original submittal, the NO_X value that is proposed as BACT for each of the RBs (110 ppmvd @ 8% O_2) is in the middle range of the values listed. The answer that you gave to Question No. 6 of the RAI did not adequately provide reasonable assurance that you are achieving the lowest BACT for NO_x and did not use the top down BACT approach. Therefore, please use the top down BACT approach to evaluate NO_x BACT. Also, in order to provide some specific justification for a higher level of NO_x for BACT for your RBs, please provide the last five years of actual performance testing results for the NO_x emissions from each emissions unit. ***Because of the ambient concerns for ozone for Escambia County and the surrounding area, it seems appropriate to achieve the lowest emissions rate possible for NO_X.***

6. The SO_2 and NO_2 significant impact results presented in Table 7-11 appear to be incorrect. The significant impact results presented for these two pollutants on the accompanying compact disk are much higher than those given in the table. Please submit the correct values.

7. Modification of the SO_2 permit limits for Power Boilers 3 and 4 are being requested. We requested in Comment 1 of the August, 2003 RAI that inputs into the air dispersion modeling should be based on future potentials/allowables. The SO_2 PSD increment analysis submitted with this revised application did not use the potential/allowables for these emission units. Please correct and resubmit. In addition, the SO_2 PSD analysis shows a predicted maximum 24-hour SO_2 increment impact of 90.92 ug/m^3 using actual emission rate inputs of 161 lb/hr and 100.2 lb/hr for Power Boilers 3 and 4, respectively. This impact compares to the 24-hour increment of 91 ug/m^3. However, for Power Boilers 3 and 4, International Paper has requested permit limits of 201 lb/hr and 300.3 lb/hr, which, if they were to become actuals in the future, would result in predicted violations of the 24-hr SO_2 increment due solely to International Paper sources, and would prevent the Department from issuing permits with these limits. Please address this issue to remove the problem.

The Department will resume processing this application after receipt of the requested information. If you have any questions regarding this matter, please call Bruce Mitchell at (850)413-9198 or Cleve Holladay at (850)921-8986.

Sincerely,

Trina L. Vielhauer

Trina L. Vielhauer
Chief
Bureau of Air Regulation

TLV/bm

cc: Gregg Worley, EPA
John Bunyak, NPS
Ellen Porter, USF&WS
Sandra Veazey, NWD
William V. Straub, P.E., All4 Inc.

Trina
Cleve 10-8-04
Bruce

Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary

June 23, 2004

CERTIFIED MAIL - Return Receipt Requested

Ms. Nicki S. Slusser, Mill Manager
International Paper Company
Pensacola Mill
375 Muscogee Road
Cantonment, Florida 32533-0087

Re: DEP File No. 0330042-008-AC/PSD-FL-335
Pensacola Mill
Pulp Production Increase

Dear Ms. Slusser:

The Department issued an air construction permit on June 11, 2004, to Gulf Power Company's Crist Electrical Generating Plant. The permit removed violations to the ambient air quality standards for sulfur dioxide for this facility. Based on this and pursuant to Rule 62-4.055(5), Florida Administrative Code, the Department is requesting that you provide responses to the requests for additional information letters mailed on August 29, 2003, and February 12, 2004, within 90 days of June 11, 2004, which is September 9, 2004.

The Department will resume processing this application after receipt of the above requested information. If you have any questions regarding this matter, please call Bruce Mitchell at (850)413-9198 or Cleve Holladay at (850)921-8986.

Sincerely,

Trina L. Vielhauer
Chief
Bureau of Air Regulation

TLV/bm

cc: Sandra Veazey, NWD
Gregg Worley, EPA
John Bunyak, NPS
Ellen Porter, USF&WS
Jim Spahr, IPC
William V. Straub, P.E., All4 Inc.

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1. Article Addressed to:

Ms. Nicki S. Slusser, Mill Manager
International Paper Company
Pensacola Mill
375 Muscogee Road
Cantonment, Florida 32533-0087

COMPLETE THIS SECTION ON DELIVERY

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X [signature] ☐ Agent ☐ Addressee

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C. Date of Delivery 10-28-4

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Street, Apt. No.; or PO Box No. 375 Muscogee Road
City, State, ZIP+ 4 Cantonment, Florida 32533-0087

PS Form 3800, January 2001 See Reverse for Instructions

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Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Jeb Bush
Governor

David B. Struhs
Secretary

February 12, 2004

CERTIFIED MAIL - Return Receipt Requested

Ms. Nicki S. Slusser, Mill Manager
International Paper Company
Pensacola Mill
375 Muscogee Road
Cantonment, Florida 32533-0087

Re: DEP File No. 0330042-008-AC/PSD-FL-335
Pensacola Mill
Pulp Production Increase

Dear Ms. Slusser:

The Department reviewed for completeness the application received on August 1, 2003, for an increase in pulp production from 1500 tons per day (TPD) air dried bleached tons pulp (ADBTP) to 1650 TPD ADBTP at the above referenced existing facility in Escambia County. Based on the initial review, a letter requesting additional information was sent certified on August 29, 2003. A response to that letter has not yet been received.

The rule for establishing "Contemporaneous Emissions Changes" under PSD preconstruction review is contained at Rule 62-212.400(2)(e), F.A.C., which states that "an increase or decrease in the actual emissions, or in the quantifiable fugitive emissions, of a facility is contemporaneous with a particular modification if it occurs within the period beginning five (5) years prior to the date on which the owner or operator of the facility submits a complete application for a permit to modify the facility, and ending on the date on which the owner or operator of the facility projects the new or modified facility to begin operation". The definition of "Actual Emissions" at Rule 62-210.200, F.A.C., states that "in general, actual emissions as of a particular date shall equal that average rate, in tons per year, at which the emissions unit actually emitted the pollutant during a two year period which precedes the particular date and which is representative of the normal operation of the emissions unit. The Department may allow the use of a different time period upon a determination that it is more representative of the normal operation of the emissions unit. Actual emissions shall be calculated using the emissions unit's actual operating hours, production rates and types of materials processed, stored, or combusted during the selected time period." For the application package received on August 1, 2003, the years "1998 and 1999" were selected as the years for consideration for this aspect of the PSD approach. Since the application is still incomplete, all of 1998 and some of 1999 is outside the 5 year window and is no longer contemporaneous. Therefore, please change the appropriate parts of the application and resubmit them pursuant to this issue. In addition, the same timeframe that you use for the contemporaneous calculations is to be used for the PSD increment evaluation. Therefore, please submit, if appropriate, the new information for the PSD increment evaluation.

In an attempt to find a viable way to permit your mill's expansion project independent of the Gulf Power Crist Plant's issues that are under the Department's review, we have remodeled your mill's SO_2 emissions data provided in the application. Several runs were conducted while reducing the allowable SO_2 emissions from the Nos. 3 and 4 Power Boilers and the Nos. 1 and 2 Recovery Boilers. Based on the modeling results, we have determined that a 40 percent reduction across the board for the named emissions units is appropriate to remove the modeled NAAQS violation from your facility alone; and, it appears that the proposed reduction will provide the Department with the reasonable assurances that it would need to draft an air construction permit and go out with an Intent to Issue for publication. In addition, it seems that the suggested reductions are permit related reductions and not actual emission reductions. This value was discussed with Mr. Jim Spahr on Monday, February 9th.

The Department will resume processing this application after receipt of the above requested information, as well as a response to the previously issued incompleteness letter. If you have any questions regarding this matter, please call Bruce Mitchell at (850)413-9198 or Cleve Holladay at (850)921-8986.

Sincerely,

Trina L. Vielhauer

Trina L. Vielhauer
Chief
Bureau of Air Regulation

TLV/bm

cc: Sandra Veazey, NWD
Gregg Worley, EPA
John Bunyak, NPS
Ellen Porter, USF&WS
Jim Spahr, IPC
William V. Straub, P.E., All4 Inc.
Bruce
Cleve
Trina's Reading File

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1. Article Addressed to:

Ms. Nicki S. Slusser, Mill Manager
International Paper Company
Pensacola Mill
375 Muscogee Road
Cantonment, Florida 32533-0087

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☒ Agent ☐ Addressee

B. Received by (Printed Name) DAVID J. HOWARD

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Ms. Nicki S. Slusser, Mill Manager

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Street, Apt. No.; or PO Box No. 375 Muscogee Road
City, State, ZIP+4 Cantonment, Florida 32533-0087

PS Form 3800, January 2001 See Reverse for Instructions

Department of
Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

August 29, 2003

CERTIFIED MAIL - Return Receipt Requested

Ms. Nicki S. Slusser, Mill Manager
International Paper Company
Pensacola Mill
375 Muscogee Road
Cantonment, Florida 32533-0087

Re: DEP File No. 0330042-008-AC/PSD-FL-335
Pensacola Mill
Pulp Production Increase

Dear Ms. Slusser:

The Department has received the application on August 1, 2003, for an increase in pulp production from 1500 tons per day (TPD) air dried bleached tons pulp (ADBTP) to 1650 TPD ADBTP at the above referenced facility in Escambia County. Based on our initial review of the proposed project, we have determined that the following additional information is needed in order to continue processing this application package. Please provide all assumptions, calculations, and reference material(s), that are used or reflected in any of your responses.

1. For the modified emissions units (EUs) and for PSD preconstruction review purposes, the calculations of the various affected pollutants, for their net change, show past actuals to future actuals. The required calculations should have been done to show past actuals to future potentials/allowables. Please recalculate and submit. Inputs into the air dispersion modeling submitted with this application should have been based on future potentials/allowables. All additional modeling required by these changes should be performed and submitted.

2. It appears that the incremental increases in pollutants are estimated as if all of the new 150 ADTBP/day were from hardwood. Is this correct? Are the hardwood emission factors greater than the softwood emission factors for every pollutant? Please correct any calculations where appropriate.

3. The calculations for the recovery boilers (RBs; Units 1 and 2) assume an increase in black liquor solids (BLS) of 123,750/111,000 = 1.115; and, the corresponding increase in air dried tons bleached pulp (ADTBP) is 1650/1500 = 1.100. Why is there a 11.5 percent increase in BLS to match a 10 percent increase in ADTBP? In addition, is the 3600 lbs BLS/ADTBP factor proposed for the permit the same as the factor used in 1998-1999? Used currently?

4. Submit a cost analysis for using a cleaner fuel oil in the modified fuel oil combustion sources (e.g., lime kiln, calciner and RBs) in terms of \$/ton of sulfur dioxide (SO_2) removed. The affected EUs presently are allowed to burn natural gas and Nos. 4 and 6 fuel oils with a maximum sulfur content of 1.0 percent, by weight. The cost analysis should focus on fuel oil with sulfur contents of 0.5, 0.1 and 0.05 percent, by weight.

5. From the BACT table provided, the SO_2 value that is proposed as BACT for each of the RBs (151 lbs/hr) is not the lowest value listed and seems to be very high compared to their past actuals (66 lbs/hr for Unit 1 and 46 lbs/hr for Unit 2). Please explain why such a large increase in the SO_2 emissions (129% for Unit 1 and 228% for Unit 2), when the percentage increase in BLS firing is established as only 11.5%? It is assumed that the increased values are not attributed to the startup and shutdown activities where the fuel oil usage is increased, but due to steady-state operations?

6. From the BACT table provided, the NO_X value that is proposed as BACT for each of the RBs (110 ppmvd @ 8% O_2) is in the middle range of the values listed. Therefore, for purposes of the BACT analysis, please submit the average and incremental cost effectiveness for NO_X control options. The cost effectiveness should be developed as a "cost per ton of pollutant removed" in order to help evaluate the reasonableness of various emission control technology costs and to help evaluate the added benefit of marginally different control options. These types of costs should be developed for the control options available, including, but not limited to, clean fuels, better combustion methods (e.g., Low NO_X burners), selective catalytic reduction (SCR) and selective non-catalytic reduction (SNCR) alternatives. In addition, explain why a lower emission rate is not achievable when the BACT values appear to indicate that a lower BACT is achievable.

7. Please provide NCASI Technical Bulletins Nos. 675, 676, 701 and 849 that were referred to in the BACT analysis and the calculations.

8. With an increase in production of ADUP, it is assumed that there will be an increase in total reduced sulfur (TRS) emissions; and, with the incineration of these TRS gases, then there will be an increase in SO_2 emissions. These SO_2 emissions are subject to PSD review scrutiny pursuant to EPA's memorandum 4.32, which requires resultant pollutants to be evaluated in accordance with the PSD regulations, in this case, Rule 62-212.400, F.A.C. Currently, the noncondensible gases of TRS are collected and transported to the Lime Kiln and the Fluo-Solids Calciner for incineration. BACT proposed for the Lime Kiln/Mud Dryer to address all SO_2 potential emissions is a wet scrubber. Please evaluate the potential SO_2 emissions from the incineration of the TRS gases in the Fluo-Solids Calciner.

9. On pages 7-2 and 7-6 the minor source baseline dates for PM10, SO_2 and NO_2 are incorrectly identified as 1979, 1979 and 1991. The correct minor source baseline dates for PM10 and SO2 are December 27, 1977, and for NO2 the correct minor source baseline date is March 28, 1988, (F.A.C. Rule 62-204.360 (1), (2) and (3)). The major source baseline dates for PM10 and SO_2 are January 6, 1975, and for NO_2 the major source baseline date is February 8, 1988 (Rule 62-204.200(20), F.A.C.). Baseline emissions should be based on these dates. If there were any increases in mill emissions after the major source baseline dates these emissions would consume increment and would not be included in the baseline emissions. For example, any increases or changes in emission parameters for PM10 and SO_2 emissions as a result of the PSD permit submitted in 1979 would consume increment. In addition any increases or changes in NO_2 emissions or stack parameters as a result of the PSD permit submitted in 1991 would also consume increment.

10. Table 7-1 gives the CO emissions increase due to the project as 110.54 tons per year. However, in Table 4-4, this increase is given as 2,592.41 tons per year (TPY) and in Table B-1, of Appendix B, this increase is given as 2,532.27 TPY. Which value is correct? The CO modeling was based on the value in Table 7-1. This modeling needs to be corrected and resubmitted if the CO increase is greater than that given in Table 7-1. PM10 increases in Tables 4-1 and 7-1 are given as 320.74 TPY; however, when the increases given in Table

7-1 are added up they give only 307.46 TPY. In addition, the PM10 increase given in Table B-1 of Appendix B is given as 301.69 TPY. The VOC increase in Table 4-4 is given as 420.33 TPY, while in Table B-1, it is given as 288.43 TPY. Please address this discrepancy between all of these values. Also, a detailed explanation of the relationship of the short-term and the long-term project related emissions in Table 7-1 should be given for each source. Their relationship to the model input values for the significant impact, ambient air quality, and PSD increments should be given along with detailed calculations.

11. No NAAQS or PSD Class II PM10 modeling was contained on the compact disc containing the modeling information. Please provide this modeling or any corrected modeling results based on the comments in this letter.

12. It appears from Figure 2-1, in the main application, and Figure 2-1, in the appendices, that the property boundary was used to determine placement of receptors. Any property that is not fenced or does not have appropriate physical boundaries is considered "ambient air" for modeling purposes and receptors must be placed on this property for evaluation of predicted impacts. What fencing or physical barriers preclude public access to the property enclosed by the boundaries chosen to determine receptor placement?

13. The building information contained in the gridded facility plot plan, Figure D-2, in appendix D, and the BPIP building, structure data and location data, contained in Figure 7-4, in the main application, do not appear to match. Please indicate which of these is correct. In addition, please update the application with the correct detailed building structure information used in the modeling to determine downwash impacts. This information should include building dimensions for all buildings used in the modeling analyses. In addition, please provide a detailed plot plan to scale of the facility showing the exact location of the modeling origin in meters and the location from this modeling origin of each building and stack. All stacks and buildings should be labeled. In addition, a grid with 50 meter spacing should be overlaid over this plot plan so that the information on the plot plan can be easily correlated with the information in the BPIP files.

14. TRS emissions are shown as PSD significant in Table 4-2. Even though there are no standards or significant monitoring concentrations to model for, a qualitative discussion of potential TRS impacts should be presented.

15. The Scheffe analysis presented on pages 7-50 through 7-52 indicates that the maximum predicted ambient ozone concentration of 0.18, if added to the maximum monitored value given in Table 7-20, would result in a predicted exceedance of the ozone standard. Because of the ambient concerns for ozone for Escambia County and the surrounding area, it also seems appropriate to also achieve the lowest emissions rate possible for VOC. Please indicate what measures can be taken to reduce VOC emissions from this project.

16. According to an EPA Region 4 comment, ADEM has indicated that actual values in their database are unreliable for use. Instead of actual values, the allowable values for ADEM sources given in Tables 7-7, 7-8, and 7-9 should be used for PSD increment modeling for SO_2, PM10 and NO_X.

17. The 20 D rule states that for annual emissions, the distance D is measured from the edge of the significant impact area to the source to be evaluated. The significant impact area for NO_X is given as 5 km in Table 7-11. This value should be subtracted from all distances in Table D-5, of Appendix D, and the 20 D analysis should be redone to determine whether additional NO_X sources should be included in the modeling.

18. The SO_2 significant impact area given in Table 7-11 appears to be incorrect. Based on the modeling output, the SO_2 significant impact area is 15 km. Please supply the correct significant impact area for SO_2.

19. Please give the justification and calculations for all PSD increment emission rates given for the mill in Table 7-5.

20. The SO_2 modeling results included reduced emission rates from Gulf Power sources as inputs into the AAQS and PSD increment modeling. These reductions in impacts can not be used unless Gulf Power commits to reducing these emissions to the lowered levels through a permitting action with the Department. Also, in Table 7-12, the maximum modeled SO_2 concentration is given as 227.7 ug/m^3. However, the modeling output gives 233 ug/m^3 as the maximum. This value when added to the background concentration would result in a violation of the AAQS even with Gulf Power's reductions. Please address. This value also was in an area of 500 m receptor grid spacing, which was not refined. All predicted values within the highest 10% of the maximum predicted values should be evaluated through a "refined" modeling grid around the receptor point with at least 100 meter spacing. Where this was not done, this refined modeling should be done for all pollutants and the results should be submitted.

21. On page 7-11, it is mentioned that any stacks that were inverted or have a raincap were evaluated with a 0.01 meter per second exit velocity. Which sources in Figure 7-6, which lists the physical stack characteristics of mill sources, have rain caps? In addition, on page 7-14, it is mentioned that, where stack information was missing in Tables 7-7, 7-8 and 7-9, representative physical stack characteristics were employed and that these characteristics were bolded in the tables. However, there are no bolded values in these tables. Please indicate which sources should have been bolded.

Any additional comments from EPA and the U.S. Fish and Wildlife Service will be forwarded to you after we receive them. The Department will resume processing this application after receipt of the requested information. If you have any questions regarding this matter, please call Bruce Mitchell at (850)413-9198 or Cleve Holladay at (850)921-8986.

Sincerely,

Trina L. Vielhauer

Trina L. Vielhauer
Chief
Bureau of Air Regulation

TLV/bm

cc: Gregg Worley, EPA
John Bunyak, NPS
Ellen Porter, USF&WS
Sandra Veazey, NWD
William V. Straub, P.E., All4 Inc.

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Ms. Nicki S. Slusser, Mill Manager
International Paper Company
Pensacola Mill
375 Muscogee Road
Cantonment, Florida 32533-0087

COMPLETE THIS SECTION ON DELIVERY

A. Signature X [signature] ☐ Agent ☐ Addressee

B. Received by (*Printed Name*) AUBREY C SIMMONS

C. Date of Delivery 8-2-03

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
XX☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number
(Transfer from service label) 7001 1140 0002 1577 9250

PS Form **3811**, August 2001 Domestic Return Receipt 102595-02-M-1540

U.S. Postal Service
CERTIFIED MAIL RECEIPT
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Ms. Nicki S. Slusser, Mill Manager

Postage	$	Postmark Here
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Return Receipt Fee (Endorsement Required)		
Restricted Delivery Fee (Endorsement Required)		
Total Postage & Fees	$	

7001 1140 0002 1577 9250

Sent To Ms. Nicki S. Slusser, Mill Manager
Street, Apt. No.; or PO Box No. 375 Muscogee Road
City, State, ZIP+ 4 Cantonment, Florida 32533-0087

PS Form 3800, January 2001 See Reverse for Instructions

all4 inc.
2393 Kimberton Road • Suite 100 • P.O. Box 299 • Kimberton, PA 19442
610.933.5246 (phone) • 610.933.5127 (fax) • www.all4inc.com

July 21, 2003

Bruce Mitchell
Florida Department of Environmental Protection
Division of Air Resource Management
2600 Blair Stone Road MD 5500
Tallahassee, Florida 32399-2400

Subject: International Paper Pensacola Mill - Mill Viability Project Phase II PSD Application Submittal PSD-FL-335
0330042-008-AC

Dear Mr. Mitchell:

Enclosed are five (5) copies of the Phase II PSD Application for the Mill Viability Project at International Paper Company's (IP's) Pensacola Florida Mill. This permit application is a follow-up to the discussions that we had with you and other Florida Department of Environmental Protection (DEP) staff in December, 2002. This application also takes into account the information presented in the IP April, 2003 Phase I submittal. The permit application addresses the Mill's plans for a multi-year project to upgrade the waste water treatment system and install a pipeline to future wetlands at the head of the Perdido Bay. In support of this project, the Mill will need to produce an additional 150 air dried bleach tons of slush pulp per day (ADBTP/day) to maintain the viability of the Mill.

Please forward three (3) copies of the application to Mr. Cleve Holladay of your office. IP requests that Mr. Holladay forward a copy to Mr. Stan Krivo of the United States Environmental Protection Agency (EPA) Region IV office and forward a copy to the Federal Land Manager, Mr. Bud Rolofson, who is responsible for the Breton Wilderness Area. IP has provided a copy of the application to Mr. Rick Bradburn of the Northwest District of the DEP. IP will submit the requisite application fee under a separate submittal, directly from the Pensacola Mill.

Mr. Jim Spahr from the Pensacola Mill will contact you within the next several days to discuss the permit application and to arrange a time that is mutually agreeable to review the application in detail. Thank you in advance for your continued support and guidance as IP pursues this very important project.

Sincerely,
All4 Inc.

William V. Straub, PE
Principal Consultant

cc: Jim Spahr – International Paper
Glenn Rives – International Paper
Cleve Holladay – Florida DEP
Rick Bradburn – Florida DEP
Stan Krivo – EPA Region IV
Bud Rolofson – Breton Wilderness Area
John Egan – All4

all4 inc.
2393 Kimberton Road • Suite 100 • P.O. Box 299 • Kimberton, PA 19442
610.933.5246 (phone) • 610.933.5127 (fax) • www.all4inc.com

MEMORANDUM

To:	Bruce Mitchell	*Date:*	July 31, 2003
From:	Bill Straub		
Subject:	**PE Sealed Pages for the IP Pensacola Mill Viability Project Air Construction Permit – Phase II PSD Application**		
cc:			

Enclosed are five (5) copies of the Professional Engineer Statement page and the attached exception page. All of the copies have been sealed. I apologize for any confusion. Please give me a call if you have any questions at 610.933.5246 x 12.

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BUREAU OF AIR REGULATION

RECEIVED
AUG 01 2003
BUREAU OF AIR REGULATION

4. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this Application for Air Permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

If the purpose of this application is to obtain a Title V source air operation permit (check here [ ], if so), I further certify that each emissions unit described in this Application for Air Permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance schedule is submitted with this application.

If the purpose of this application is to obtain an air construction permit for one or more proposed new or modified emissions units (check here [✓], if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

If the purpose of this application is to obtain an initial air operation permit or operation permit revision for one or more newly constructed or modified emissions units (check here [ ], if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

[signature] 7/21/03
Signature Date

(seal) *see attached exception* WVA

* Attach any exception to certification statement.

STRAUB CERTIFICATE NO. 53838 STATE OF FLORIDA PROFESSIONAL ENGINEER

As an independent professional engineer and air quality consultant, my responsibilities with this project included the following:

- review and recommendation of air pollution control strategy;
- qualification and quantification of emissions of regulated air pollutants;
- identification of permitting approach; and
- development of the PSD permit application.

IP engineering personnel and emission unit/air pollution control device vendors have lead the design and engineering modifications to the emissions units and associated air pollution control equipment. IP staff are not under my direct supervision. I reviewed the data to the extent that it relates to applicable air quality regulatory and permitting requirements and found it to be in conformity with sound engineering principles applicable to the control of emissions of air pollutants.

Signature

7/21/03
Date

WILLIAM V. STRAUB
CERTIFICATE
NO. 53338
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

INTERNATIONAL PAPER

PENSACOLA MILL
375 MUSCOGEE ROAD
PO BOX 87
CANTONMENT FL 32533-0087
PHONE 850 968 2121

July 31, 2003

Bruce Mitchell
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Enclosed is check number 1802901296 for $7,500.00 to cover Air Permit Application Fee for Air Permit Application filed on July 21, 2003.

If you have any questions, please contact me at (850) 968-2121 extension 3833.

Sincerely,

Jim Spahr
Environmental Engineer
International Paper
Pensacola Mill

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AUG 01 2003
BUREAU OF AIR REGULATION

Enclosure

RECEIVED
AUG 01 2003
BUREAU OF AIR REGULATION

4. Professional Engineer Statement:

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(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

If the purpose of this application is to obtain a Title V source air operation permit (check here [ ], if so), I further certify that each emissions unit described in this Application for Air Permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance schedule is submitted with this application.

If the purpose of this application is to obtain an air construction permit for one or more proposed new or modified emissions units (check here [✓], if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

If the purpose of this application is to obtain an initial air operation permit or operation permit revision for one or more newly constructed or modified emissions units (check here [ ], if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

[signature] 7/21/03

Signature Date

(seal) *see attached exception* WVA

WI... STRAUB
CERTIFICATE
NO. 59838
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

* Attach any exception to certification statement.

As an independent professional engineer and air quality consultant, my responsibilities with this project included the following:

- review and recommendation of air pollution control strategy;
- qualification and quantification of emissions of regulated air pollutants;
- identification of permitting approach; and
- development of the PSD permit application.

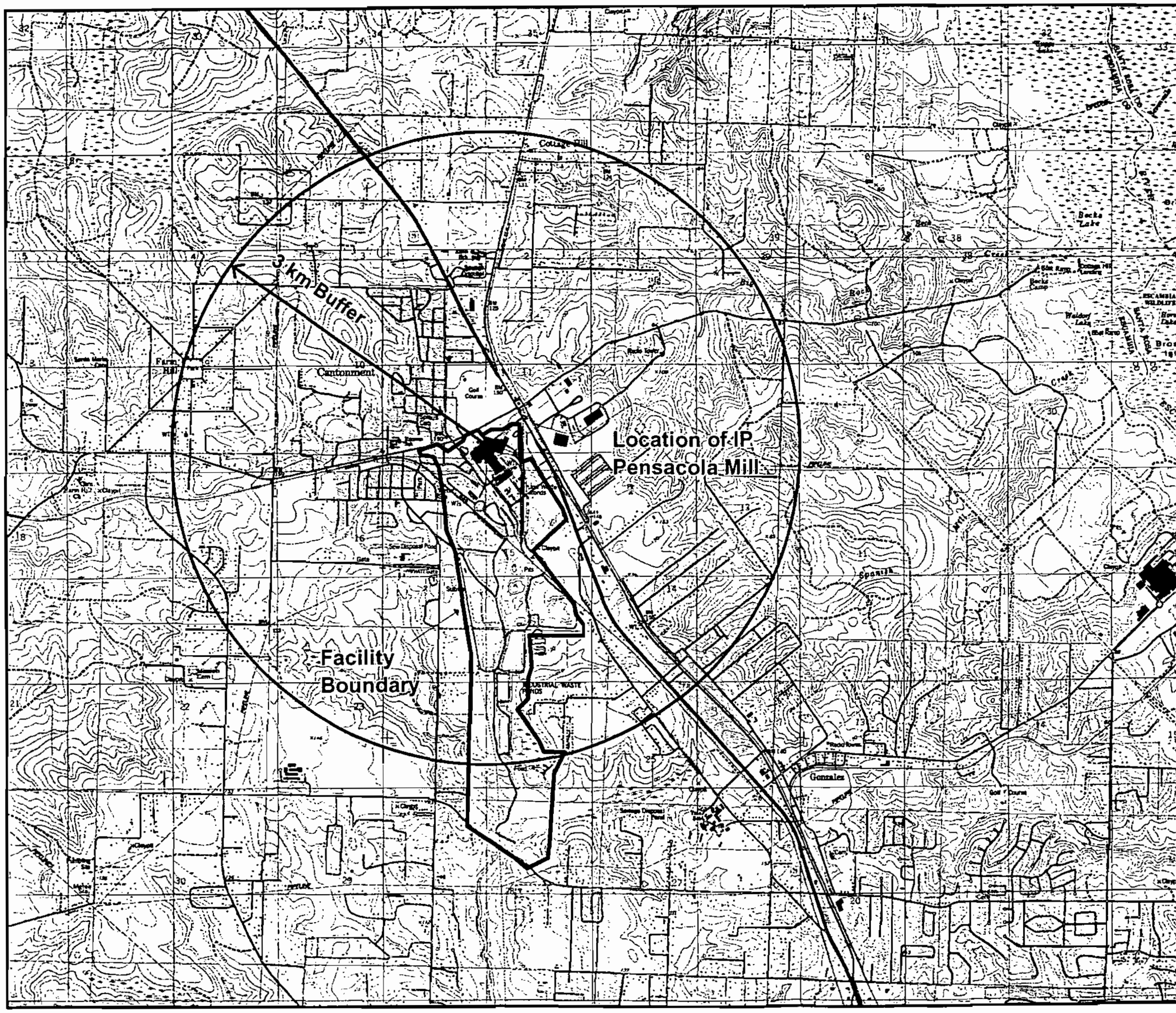
IP engineering personnel and emission unit/air pollution control device vendors have lead the design and engineering modifications to the emissions units and associated air pollution control equipment. IP staff are not under my direct supervision. I reviewed the data to the extent that it relates to applicable air quality regulatory and permitting requirements and found it to be in conformity with sound engineering principles applicable to the control of emissions of air pollutants.

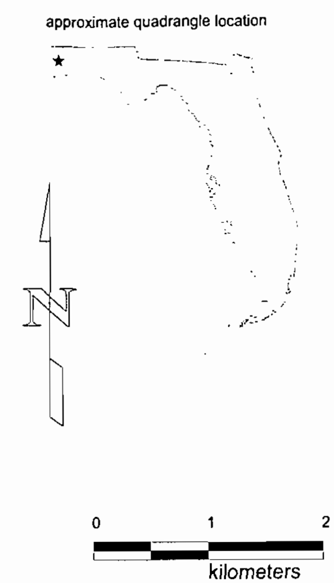
Signature

7/21/03
Date

RECEIVED
AUG 01 2003
BUREAU OF AIR REGULATION

WILLIAM V. STRAUB
CERTIFICATE
NO. 53338
STATE OF
FLORIDA
PROFESSIONAL ENGINEER





Source: Base map adapted from USGS 7.5 minute series, Camtonment, FLA Quadrangle, 1994.

Figure 7-1
Land-Use of Area
Surrounding the IP Pensacola Mill

BEST AVAILABLE COPY

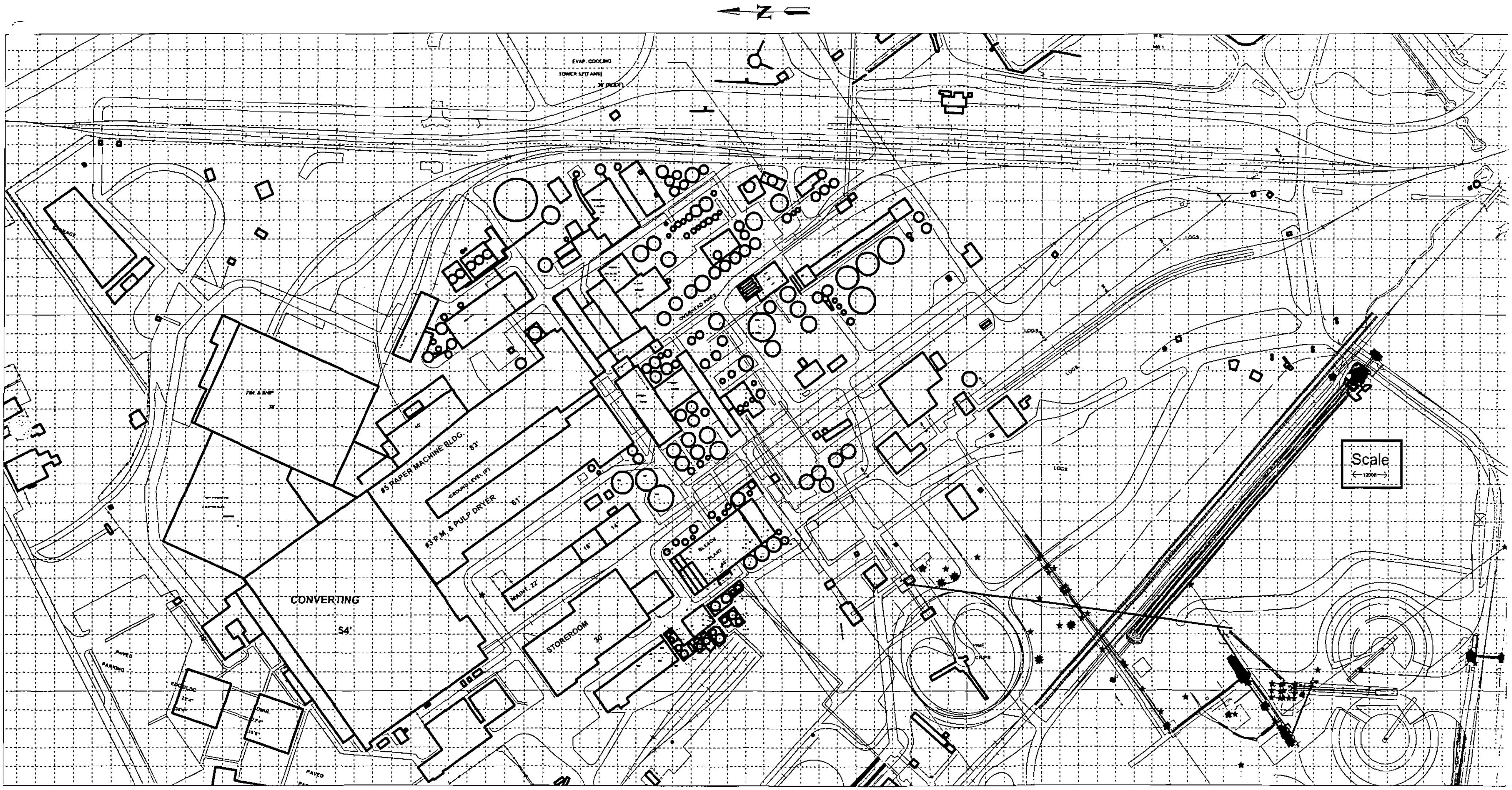


Figure D-2
IP Pensacola Mill
Facility Plot Plan

c: clients files ip pensacola psd application figure D-2.wor

INTERNATIONAL PAPER

Pensacola, Florida

Air Quality Modeling Files

July 2003

all4 inc.

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Table D-2
Local SO_2 Sources
Meeting 20D Criteria

FACILITY ID	OWNER/COMPANY	SITE NAME	NORTH (km)	EAST (km)	EU ID	EU DESCRIPTION	EU STATUS	STACK HT (ft)	DIAM (ft)	EXIT TEMP (F)	ACFM	DSCFM	VEL (ft/s)	Potential (lb/hr)	Potential (tpy)	Allowable (lb/hr)	Allowable (tpy)	2001 Actual (tpy)	2000 Actual (tpy)
[illegible]	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	2	ADIPIC ACID SYNTHESIS, NOX THERMAL REDUCTION UNIT #1 TRU/SCR	A	60.00	4	435	71000	0	94	0.046	0.2	0	0	0	0
[illegible]	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	3	B & W BOILER #8 (STACK #1)	A	125.00	12	230	236943	0	34	0.075	0.33	0	0	0.21552	0.261081
[illegible]	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	4	B & W BOILER #7 (STACK #2)	A	125.00	12	230	236943	0	34	0.075	0.33	0	0	0.226659	0.234144
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	5	#1 DOWTHERM VAPORIZER -NAT. GAS,OR #2 OIL (COMMON STACK W #	A	125.00	2.7	311	6318	0	18	0	0	0	0	0.01524	0.021372
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	7	"2 VAPORIZER- NAT. GAS OR #2 OIL	A	125.00	2.7	311	7198	4029	20	0	0	0	0	0.00813	0.021384
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	8	#3 DOWTHERM VAPORIZER- NAT. GAS,OR #2 OIL (COM. STACK W #5)	A	125.00	2.7	311	7198	4029	20	0	0	0	0	0.01911	0.021384
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	9	#4 DOWTHERM VAPORIZER- NAT.GAS, OR #2 OIL, (COM. STACK W #1)	A	125.00	2.7	311	7198	4029	20	0	0	0	0	0.02379	0.030732
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	10	#5 DOWTHERM VAPORIZER- NAT.GAS, OR #2 OIL (COM.STACK W #3)	A	125.00	2.7	311	7198	4029	20	0	0	0	0	0.03111	0.030732
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	11	#6 DOWTHERM VAPORIZER- NAT. GAS OR #2 OIL(COMMON STACK #7)	A	125.00	2.7	311	7198	4029	20	0	0	0	0	0.02016	0.026937
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	13	#7 VAPORIZER (COMMON STACK #6)	A	125.00	2.7	311	9798	5479	28	26	9	0	0	0.03954	0.048102
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	14	CE BOILER #4 (USES STACK #5 IN COMMON WITH CE BOILER #3)	A	150.00	10	360	168664	0	35	610.83	2938.25	0	0	18.613725	0.347672
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	15	CE BOILER #5 (USES STACK #3 IN COMMON WITH CE BOILER #6)	A	150.00	10	360	168664	0	35	610.83	2938.25	0	0	811.966448	196.475876
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	16	CE BOILER #6 (USES STACK #3 IN COMMON WITH CE BOILER #5)	A	150.00	10	360	168664	0	35	610.83	2938.25	0	0	166.488442	28.230309
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	32	COGENERATION PLANT	A	100.00	15	300	799	491	75	3.19	14	0	0	10.225545	13.9722
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	38	RESEARCH & DEVELOPMENT	A	33.00	0.3	200	100	0	23	0	0	0	0	0	0
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	49	HYDROGEN GENERATION FACILITY, PLANT #1	A	90.00	4.8	393	50257	0	46	0	0	0	0	0	0
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	75	VAPORIZER NO.8	A	125.00	2.7	311	9798	5479	28	0.162	0.7096	0	0	0	0
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	76	MALEIC ANHYDRIDE (MA)PLANT-UNCONTROLLED OFF GASES	A	125	3.5	158	0	60000	0	1.132	4.96	0	0	0	0
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	84	AREA 471 ALPHOX, RAW MATERIAL AND PRODUCT TANK FLARES	A	0	0	0	0	0	0	0	0	0	0	0	0
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	85	AREA 471 ALPHOX, SYNTHESIS, REFINING, RAW MATERIAL RECOVERY	A	0	0	0	0	0	0	0	0	0	0	0	0
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	86	AREA 471 ALPHOX, ORGANIC BACK-UP DEVICE (OBUD)	A	0	0	0	0	0	0	0	0	0	0	0	0
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	87	AREA 471 ALPHOX, FUGITIVE EMISSIONS, PRESSURE RELIEF FLARE	A	0	0	0	0	0	0	0	0	0	0	0	0
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	1	Boiler #1 (Phase II Acid Rain Unit)	A	450	18	290	802500		52	633.6	2775	633.6	2775	0.0875	0.1897
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	2	Boiler #2 (Phase II Acid Rain Unit)	A	450	18	290	802500		52	633.6	2775	633.6	2775	0.0955	0.1663
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	3	Boiler #3 (Phase II Acid Rain Unit)	A	450	18	290	802500		52	1089	4770	1089	4770	0.1278	0.3076
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	4	Boiler #4 (Phase I & II Acid Rain Unit)	A	450	18	290	802500		52	6470.5	28341	6470.5	28341	3453.631388	3546.950726
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	4	Boiler #4 (Phase I & II Acid Rain Unit)	A	450	18	290	802500		52	6470.5	28341	3015.9	13210	3453.631388	3546.950726
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	5	Boiler #5 (Phase I & II Acid Rain Unit)	A	450	18	290	802500		52	6470.5	28341	3015.9	13210	3247.337945	4839.133966
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	5	Boiler #5 (Phase I & II Acid Rain Unit)	A	450	18	290	802500		52	6470.5	28341	6470.5	28341	3247.337945	4839.133966
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	6	Boiler # 6 (Phase I Acid Rain Unit)	A	450	23.2	320	2462700		97	21858.3	87035	1965.7	8610	13019.83988	14134.84707
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	6	Boiler # 6 (Phase I Acid Rain Unit)	A	450	23.2	320	2462700		97	21858.3	87035	21858.32	87035.85	13019.83988	14134.84707
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	7	Boiler #7 (Phase I Acid Rain Unit)	A	450	23.2	320	2462700		97	37797.8	165554.2	3525.5	15441.7	17462.11997	24470.47257
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	7	Boiler #7 (Phase I Acid Rain Unit)	A	450	23.2	320	2462700		97	37797.8	165554.2	37797.8	165554.2	17462.11997	24470.47257
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	11	General Purpose Internal Combustion Engines	A			400								0.727	0.5867
1130005	EXXONMOBIL PRODUCTION COMPANY	ST REGIS TREATING FAC AND JAY GAS PLANT	3416.04	482.87	34	Three Sulfur Recovery Plants (2, 3, & 4)	A	250	3	900				1001	4384	1001	4384	2148	3225
1130005	EXXONMOBIL PRODUCTION COMPANY	ST REGIS TREATING FAC AND JAY GAS PLANT	3416.04	482.87	35	Flares	A	117	3	1832				1250				182.81	204.83
1130005	EXXONMOBIL PRODUCTION COMPANY	ST REGIS TREATING FAC AND JAY GAS PLANT	3416.04	482.87	36	Four 1200 HP JCSWD Saturn NG fired Turbines	A	35	2.5	800	6465		22					0	
1130005	EXXONMOBIL PRODUCTION COMPANY	ST REGIS TREATING FAC AND JAY GAS PLANT	3416.04	482.87	37	JCSWD 3600 HP NG fired Solar Centaur turbine	A	35	2.5	800	17333		58.9					0	
1130005	EXXONMOBIL PRODUCTION COMPANY	ST REGIS TREATING FAC AND JAY GAS PLANT	3416.04	482.87	38	1000 HP Ingersol Rand Compressor engine with catalytic cnvtr	A	30	1	800	3726		79.1					2.19	
[illegible]	EXXONMOBIL PRODUCTION COMPANY	ST REGIS TREATING FAC AND JAY GAS PLANT	3416.04	482.87	40	Jay 2, 3, & 4 Process Heaters	A	60	4									26.7	24.77
[illegible]	EXXONMOBIL PRODUCTION COMPANY	ST REGIS TREATING FAC AND JAY GAS PLANT	3416.04	482.87	41	Jay 2, 3, and 4, stabilizer bottom heaters	A	60	3									13.34	12.38
[illegible]	EXXONMOBIL PRODUCTION COMPANY	ST REGIS TREATING FAC AND JAY GAS PLANT	3416.04	482.87	42	Jay Plant Hot Oil Heater	A	60	2									16.49	14.92
1130005	EXXONMOBIL PRODUCTION COMPANY	ST REGIS TREATING FAC AND JAY GAS PLANT	3416.04	482.87	43	Two NG fired 14,300 HP Water Flood Turbines	A	30	12.5										
1130005	EXXONMOBIL PRODUCTION COMPANY	ST REGIS TREATING FAC AND JAY GAS PLANT	3416.04	482.87	44	Six 1,000 HP NG fired Ingersol Rand Compressor Engines	A	30	1									10.08	5.79
1130005	EXXONMOBIL PRODUCTION COMPANY	ST REGIS TREATING FAC AND JAY GAS PLANT	3416.04	482.87	45	One 5000 HP NG fired Cooper Bessemer "A" Engine	A	22	3										
1130005	EXXONMOBIL PRODUCTION COMPANY	ST REGIS TREATING FAC AND JAY GAS PLANT	3416.04	482.87	46	One 2500 HP NG fired Cooper-Bessemer "B" Engine	A	22	3										

Table D-11

Summary of Post Project Fugitive PM_{10} Emissions from Paved and Unpaved Roads

IP Mill

Pensacola, FL

						Segment	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W		
			GVWT (lb)			Seg Length (ft)	959.376	323.664	445.104	397.056	257.136	667.392	1763.52	353.76	1021.68	586.08	205.92	454.08	546.48	1198.56	258.72	105.6	1716	997.92	1483.68	2555.52	3168	475.2	3067.68		
Route	Length (m	Trips	Empty	Full	Average	Trips*Wgt																									
1	0.182	4	20,000	85,000	52,500	210,000	1																								
2	0.923	85	30,000	80,000	55,000	4,675,000			1		1		1				1	1	1	1											
3	0.923	51	30,000	85,000	57,500	2,932,500			1		1		1				1	1	1	1											
4	0.839	84	30,000	80,000	55,000	4,620,000			1		1		1	1	1	1															
5	0.728	164	30,000	85,000	57,500	9,430,000			1		1		1	1	1																
6	0.061	35	35,000	80,000	57,500	2,012,500		1																							
7	0.671	9	40,000	60,000	50,000	450,000																						1	1		
8	0.634	4	20,000	65,000	42,500	170,000						1	1				1	1			1										
9	1.316	11	40,000	60,000	50,000	550,000																1	1		1		1	1			
10	0.296	9	30,000	85,000	57,500	517,500														1	1	1									
11	0.296	5	40,000	75,000	57,500	287,500														1	1	1									
12	1.110	9	40,000	60,000	50,000	450,000																1	1		1	1					
13	0.534	6	40,000	60,000	50,000	300,000																1	1	1							
Total RT VMT		715.84			W =	Mean GVWT (lb)	52,500	57,500	56,400		56,400	42,500	56,256	56,653	56,653	55,000	55,554	55,554	55,938	56,083	54,167	52,625	50,000	50,000	50,000	50,000	50,000	50,000	50,000		
						Total VMT/day	1.45	4.291	64.74		37.4	1.01	259.18	33.23	95.98	18.65	10.92	24.08	28.15	68.1	1.76	1.6	16.9	2.27	11.24	8.71	13.2	3.6	10.46		
						Grand Total VMT	717																							*Total*	
						E (lb/hr) $_{PM10}$	0.00	0.01	0.10		0.06	0.00	0.42	0.05	0.16	0.03	0.02	0.04	0.04	0.11	0.00	0.00								*1.05*	*lb/hr PM_{10}*
						E (ton/yr) $_{PM10}$	0.01	0.03	0.46		0.26	0.00	1.83	0.24	0.68	0.13	0.08	0.17	0.20	0.48	0.01	0.01								*4.58*	*ton/yr PM_{10}*
						E (lb/hr) $_{PM30}$	0.01	0.04	0.54		0.31	0.01	2.14	0.28	0.80	0.15	0.09	0.19	0.23	0.56	0.01	0.01								*5.36*	*lb/hr PM_{30}*
Paved		$E = k(sL/2)^{0.65} (W/3)^{1.5} [1-(P/(4(N)))]$				E (ton/yr) $_{PM30}$	0.05	0.16	2.35		1.36	0.02	9.36	1.21	3.50	0.65	0.39	0.85	1.01	2.45	0.06	0.05								*23.47*	*ton/yr PM_{30}*
		k_{PM10} =	0.016	lb/VMT																											
		k_{PM30} =	0.082	lb/VMT																											
		sL =site specific segment silt loadings (g/m2)																													
		P	110																												
		N - Annual	365																												
Segments A-P																															
						Segment Silt Loading(g/m2)	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02									
						Values from non IP Mill	4.213E-02	4.213E-02	9.368E-02	9.368E-02	9.368E-02	9.368E-02	9.368E-02	9.368E-02	9.368E-02	9.368E-02	9.368E-02	1.889E+00	1.889E+00	1.889E+00	1.889E+00	1.889E+00	1.889E+00	4.213E-02	4.213E-02	4.213E-02	1.889E+00	4.213E-02	9.368E-02		
						Mean GVWT (lb)																	50,000	50,000	50,000	50,000	50,000	50,000	50,000		
Unpaved		$E=k(s/12)^a (W/3)^b /(M/0.2)^c [(365 - p)/365]$				Total VMT/day																	16.9	2.27	11.24	8.71	13.2	3.6	10.46		
						Grand Total VMT																									
		k_{PM10}	2.6	lb/VMT		E (lb/hr) $_{PM10}$																	2.25	0.30	1.49	1.16	1.75	0.48	1.39	8.82	*lb/hr PM_{10}*
		k_{PM30} =	10	lb/VMT		E (ton/yr) $_{PM10}$																	9.84	1.32	6.54	5.07	7.68	2.10	6.09	38.63	*ton/yr PM_{10}*
		s=	8.4	% (Lumber sawmills)		E (lb/hr) $_{PM30}$																	10.68	1.43	7.10	5.50	8.34	2.27	6.61	41.93	*lb/hr PM_{30}*
		p=	110			E (ton/yr) $_{PM30}$																	46.76	6.28	31.10	24.10	36.52	9.96	28.94	183.67	*ton/yr PM_{30}*
		M=	0.2	(default)																											
	PM10	a	0.8																												
		b	0.4			*unpaved (g/s) $_{PM10}$*																	*0.2829258*	*0.0380025*	*0.1881708*	*0.1458156*	*0.2209835*	*0.0602682*	*0.1751127*		
		c	0.3			paved (g/s) $_{PM10}$	0.000265	0.000899	0.013176		0.007612	0.000134	0.052547	0.006809	0.019666	0.003655	0.002173	0.004791	0.005659	0.013743	0.000337	0.000293									
	PM30	a	0.8		Volume Receptors Per Segment		13	71	5		4	8	20	4	23	13	2	6	32	15	4	2	20	11	18	31	39	5	38	320	
		b	0.5		(g/s) $_{PM10}$ for each Volume Receptor		**0.00002039**	**0.00012840**	**0.00263521**		**0.00190294**	**0.00001681**	**0.00262736**	**0.00170215**	**0.00085503**	**0.00028117**	**0.00108633**	**0.00079850**	**0.00017684**	**0.00091621**	**0.00008428**	**0.00014675**	**0.01414629**	**0.00345477**	**0.01045393**	**0.00470373**	**0.00566624**	**0.01205365**	**0.00460823**		
		c	0.4		(g/s) $_{PM10}$ for each Volume Receptor		**2.04E-05**	**1.28E-04**	**2.64E-03**		**1.90E-03**	**1.68E-05**	**2.63E-03**	**1.70E-03**	**8.55E-04**	**2.81E-04**	**1.09E-03**	**7.98E-04**	**1.77E-04**	**9.16E-04**	**8.43E-05**	**1.47E-04**	**1.41E-02**	**3.45E-03**	**1.05E-02**	**4.70E-03**	**5.67E-03**	**1.21E-02**	**4.61E-03**		
Segments Q-W																															

Table D-10
Summary of Baseline Fugitive PM_{10} Emissions from Paved and Unpaved Ro
IP Mill
Pensacola, FL

Baseline Conditions																															
						Segment	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W		
				GVWT (lb)		Seg Length (ft)	959.376	323.664	445.104	397.056	257.136	667.392	1763.52	353.76	1021.68	586.08	205.92	454.08	546.48	1198.56	258.72	105.6	1716	997.92	1483.68	2555.52	3168	475.2	3067.68		
Route	Length (mi)	Trips	Empty	Full	Average	Trips*Wgt																									
1	0.182	3	20.000	85.000	52,500	157,500	1																								
2	0.923	78	30.000	80.000	55,000	4,290,000			1		1		1				1	1	1	1											
3	0.923	46	30.000	85.000	57,500	2,645,000			1		1		1				1	1	1	1											
4	0.839	76	30.000	80.000	55,000	4,180,000			1		1		1	1	1	1															
5	0.728	149	30.000	85.000	57,500	8,567,500			1		1		1	1	1																
6	0.061	32	35.000	80.000	57,500	1,840,000		1																							
7	0.671	8	40.000	60.000	50,000	400,000																						1	1		
8	0.634	3	20.000	65.000	42,500	127,500						1	1				1	1			1										
9	1.316	10	40.000	60.000	50,000	500,000																1	1		1		1	1			
10	0.296	8	30.000	85.000	57,500	460,000														1	1	1									
11	0.296	4	40.000	75.000	57,500	230,000														1	1	1									
12	1.110	8	40.000	60.000	50,000	400,000																1	1		1	1					
13	0.534	5	40.000	60.000	50,000	250,000																1	1	1							
Total RT VMT		648.344			W =	Mean GVWT (lb)	52,500	57,500	56,397		56,397	42,500	56,278	56,656	56,656	55,000	55,610	55,610	55,927	56,066	54,500	52,571	50,000	50,000	50,000	50,000	50,000	50,000	50,000		
						Total VMT/day	1.09	3.92	58.84		33.99	0.76	235.14	30.15	87.08	16.87	9.91	21.84	25.67	61.74	1.47	1.4	14.95	1.89	10.12	7.74	12	3.24	9.3		
						Grand Total VMT	649																							Total	
						E (lb/hr) $_{PM10}$	0.00	0.01	0.10		0.05	0.00	0.38	0.05	0.14	0.03	0.02	0.03	0.04	0.10	0.00	0.00								0.95	lb/hr PM_{10}
						E (ton/yr) $_{PM10}$	0.01	0.03	0.42		0.24	0.00	1.66	0.21	0.62	0.11	0.07	0.15	0.18	0.43	0.01	0.01								4.15	ton/yr PM_{10}
						E (lb/hr) $_{PM30}$	0.01	0.03	0.49		0.28	0.00	1.94	0.25	0.73	0.13	0.08	0.18	0.21	0.51	0.01	0.01								4.86	lb/hr PM_{30}
Paved		$E = k(sL/2)^{0.65} (W/3)^{1.5} [1-(P/(4(N)))]$				E (ton/yr) $_{PM30}$	0.04	0.15	2.13		1.23	0.02	8.50	1.10	3.18	0.59	0.35	0.78	0.92	2.22	0.05	0.05								21.29	ton/yr PM_{30}
		k_{PM10} =	0.016	lb/VMT																											
		k_{PM30} =	0.082	lb/VMT																											
		sL =site specific segment silt loadings (g/m2)																													
		P	110																												
		N - Annual	365																												
Segments A-P																															
						Segment Silt Loading(g/m2)	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02	5.000E-02									
						Values from non IP Mill	4.213E-02	4.213E-02	9.368E-02	9.368E-02	9.368E-02	9.368E-02	9.368E-02	9.368E-02	9.368E-02	9.368E-02	9.368E-02	1.889E+00	1.889E+00	1.889E+00	1.889E+00	1.889E+00	1.889E+00	4.213E-02	4.213E-02	4.213E-02	1.889E+00	4.213E-02	9.368E-02		
						Mean GVWT (lb)																	50,000	50,000	50,000	50,000	50,000	50,000	50,000		
Unpaved		$E=k(s/12)^{a} (W/3)^{b} /(M/0.2)^{c} [(365 - p)/365]$				Total VMT/day																	14.95	1.89	10.12	7.74	12	3.24	9.3		
						Grand Total VMT																									
		k_{PM10}	2.6	lb/VMT		E (lb/hr) $_{PM10}$																	1.99	0.25	1.34	1.03	1.59	0.43	1.24	7.87	lb/hr PM_{10}
		k_{PM30} =	10	lb/VMT		E (ton/yr) $_{PM10}$																	8.70	1.10	5.89	4.50	6.98	1.89	5.41	34.48	ton/yr PM_{10}
		s=	8.4	% (Lumber sawmills)		E (lb/hr) $_{PM30}$																	9.44	1.19	6.39	4.89	7.58	2.05	5.87	37.42	lb/hr PM_{30}
		p=	110			E (ton/yr) $_{PM30}$																	41.37	5.23	28.00	21.42	33.20	8.96	25.73	163.91	ton/yr PM_{30}
		M=	0.2	(default)																											
	PM10	a	0.8																												
		b	0.4			unpaved (g/s) $_{PM10}$																	0.2502805	0.0316408	0.1694207	0.1295767	0.2008941	0.0542414	0.1556929		
		c	0.3			paved (g/s) $_{PM10}$	0.000199	0.000821	0.011974		0.006917	0.000101	0.047701	0.006178	0.017844	0.003306	0.001975	0.004352	0.005159	0.012454	0.000284	0.000256									
	PM30	a	0.8	:	Volume Receptors Per Segment		13	7	5		4	8	20	4	23	13	2	6	32	15	4	2	20	11	18	31	39	5	38	320	
		b	0.5		(g/s) $_{PM10}$ for each Volume Receptor		0.00001533	0.00011732	0.00239486		0.00172930	0.00001265	0.00238506	0.00154451	0.00077581	0.00025434	0.00098734	0.00072531	0.00016121	0.00083027	0.00007105	0.00012821	0.01251403	0.00287644	0.00941226	0.00417989	0.00515113	0.01084828	0.00409718		
		c	0.4		(g/s) $_{PM10}$ for each Volume Receptor		1.53E-05	1.17E-04	2.39E-03		1.73E-03	1.26E-05	2.39E-03	1.54E-03	7.76E-04	2.54E-04	9.87E-04	7.25E-04	1.61E-04	8.30E-04	7.10E-05	1.28E-04	1.25E-02	2.88E-03	9.41E-03	4.18E-03	5.15E-03	1.08E-02	4.10E-03		
Segments Q-W																															

Table D-6
Local NO_x Sources
Meeting 20D Criteria

FACILITY ID	OWNER/COMPANY	SITE NAME	NORTH (km)	EAST (km)	EU ID	EU DESCRIPTION	EU STATUS	STACK HT (ft)	DIAM (ft)	EXIT TEMP (F)	ACFM	DSCFM	VEL (ft/s)	Potential (lb/hr)	Potential (tpy)	Allowable (lb/hr)	Allowable (tpy)	2001 Actual (tpy)	2000 Actual (tpy)
[illegible]40	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	2	ADIPIC ACID SYNTHESIS, NOX THERMAL REDUCTION UNIT #1 TRU/SCR	A	60	4	435	71000		94	32.74	143.4			309.36	279.3
[illegible]0	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	3	B & W BOILER #8 (STACK #1)	A	125	12	230	236943		34	22.5	98.55	22.5	98.55	17.660918	14.511182
[illegible]040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	4	B & W BOILER #7 (STACK #2)	A	125	12	230	236943		34	22.5	98.55	22.5	98.55	13.211452	14.841612
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	5	#1 DOWTHERM VAPORIZER -NAT. GAS.OR #2 OIL (COMMON STACK W #	A	125	2.7	311	6318		18	1.96	8.58			3.556	4.9351
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	7	"2 VAPORIZER- NAT. GAS OR #2 OIL	A	125	2.7	311	7198	4029	20	1.96	8.58			1.897	4.9379
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	8	#3 DOWTHERM VAPORIZER- NAT. GAS,OR #2 OIL (COM. STACK W #5)	A	125	2.7	311	7198	4029	20	1.96	8.58			4.459	4.9379
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	9	#4 DOWTHERM VAPORIZER- NAT.GAS, OR #2 OIL. (COM. STACK W #1)	A	125	2.7	311	7198	4029	20	1.96	8.58			5.551	7.1191
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	10	#5 DOWTHERM VAPORIZER- NAT.GAS, OR #2 OIL (COM.STACK W #3)	A	125	2.7	311	7198	4029	20	1.96	8.58			7.259	7.1191
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	11	#6 DOWTHERM VAPORIZER- NAT. GAS OR #2 OIL(COMMON STACK #7)	A	125	2.7	311	7198	4029	20	1.96	8.58			4.704	6.2336
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	13	#7 VAPORIZER (COMMON STACK #6)	A	125	2.7	311	9798	5479	28	3.75	16.4			9.226	11.1721
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	14	CE BOILER #4 (USES STACK #5 IN COMMON WITH CE BOILER #3)	A	150	10	360	168664		35	132.55	577.5	132.55	577.5	342.43535	383.970069
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	15	CE BOILER #5 (USES STACK #3 IN COMMON WITH CE BOILER #6)	A	150	10	360	168664		35	66.7				231.716945	308.063921
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	16	CE BOILER #6 (USES STACK #3 IN COMMON WITH CE BOILER #5)	A	150	10	360	168664		35	54.6				222.114305	351.680947
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	32	COGENERATION PLANT	A	100	15	300	799	491	75	106.6	467.1	106.6	467.1	191.355528	204.190168
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	38	RESEARCH & DEVELOPMENT	A	33	0.3	200	100		23						
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	42	NITRIC ACID PLANT E	A	120	4.5	312	107540		112	170	360	187.5	360	265.8	300.2
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	49	HYDROGEN GENERATION FACILITY, PLANT #1	A	90	4.8	393	50257		46		63.1		63.1	26.222907	50.88616
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	75	VAPORIZER NO.8	A	125	2.7	311	9798	5479	28	3.08	13.5			7.819	8.6401
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	76	MALEIC ANHYDRIDE (MA)PLANT-UNCONTROLLED OFF GASES	A	125	3.5	158		60000		44.98	197.02				
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	84	AREA 471 ALPHOX, RAW MATERIAL AND PRODUCT TANK FLARES	A												
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	85	AREA 471 ALPHOX, SYNTHESIS, REFINING, RAW MATERIAL RECOVERY	A												
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	86	AREA 471 ALPHOX, ORGANIC BACK-UP DEVICE (OBUD)	A							310	128				
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	87	AREA 471 ALPHOX, FUGITIVE EMISSIONS, PRESSURE RELIEF FLARE	A												
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	88	AREA 480 K/A EXPANSION, BACKUP VOC CONTROL FLARE	A	65	4.6									7.5805	
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	1	Boiler #1 (Phase II Acid Rain Unit)	A	450	18	290	802500		52	176	770.88			80.1708	173.9128
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	2	Boiler #2 (Phase II Acid Rain Unit)	A	450	18	290	802500		52	176	770.88			87.56	152.4078
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	3	Boiler #3 (Phase II Acid Rain Unit)	A	450	18	290	802500		52	302.5	1324.95			117.139	281.9438
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	4	Boiler #4 (Phase I & II Acid Rain Unit)	A	450	18	290	802500		52	570.28	2497.84	570.28	2497.84	829.533036	860.049544
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	5	Boiler #5 (Phase I & II Acid Rain Unit)	A	450	18	290	802500		52	658.02	2882.13	658.02	2882.13	748.300061	1145.941766
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	6	Boiler # 6 (Phase I Acid Rain Unit)	A	450	23.2	320	2462700		97	1667.16	7302.16	1667.16	7302.16	3906.31128	3986.499043
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	7	Boiler #7 (Phase I Acid Rain Unit)	A	450	23.2	320	2462700		97	2882.88	12627	2882.88	12627	4970.846236	6914.585989
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	11	General Purpose Internal Combustion Engines	A			400								10.9277	8.8195
0330114	PENSACOLA CHRISTIAN COLLEGE, INC.	PENSACOLA CHRISTIAN COLLEGE, INC.	3371.02	477.77	3	Internal Combustion Engine #3	A	37	1.3	1000	7500		94.2	34	145		145	0.06	0.34
0330114	PENSACOLA CHRISTIAN COLLEGE, INC.	PENSACOLA CHRISTIAN COLLEGE, INC.	3371.02	477.77	5	Internal Combustion Engines #1 and #2	A	37	1.1	1000	7500		131.5	.68	298	34	149	0.27	11
0330114	PENSACOLA CHRISTIAN COLLEGE, INC.	PENSACOLA CHRISTIAN COLLEGE, INC.	3371.02	477.77	6	Hot Water Generators	A	10	0.25									7.52	5.9
1130003	STERLING FIBERS, INC.	STERLING FIBERS, INC.	3380.2	489.2	4	BOILER #8	A	50	5	365	51000		43.3	46	220			38	210.6
1130003	STERLING FIBERS, INC.	STERLING FIBERS, INC.	3380.2	489.2	5	BOILER #7	A	50	5	365	51000		43.3	45	191			62.1	138.6
1130003	STERLING FIBERS, INC.	STERLING FIBERS, INC.	3380.2	489.2	9	BOILER #9	A	50	5	340	60000		50.9	48.6	204			109.8	289.8
[illegible]04	AIR PRODUCTS AND CHEMICALS, INC.	AIR PRODUCTS AND CHEMICALS, INC.	3383.4	487	1	RILEY STOKER BOILER	A	41	6.2	250	48100		26	39.8	174.4			40.303013	37.359175
[illegible]4	AIR PRODUCTS AND CHEMICALS, INC.	AIR PRODUCTS AND CHEMICALS, INC.	3383.4	487	3	B & W BOILER	A	40	5	750	42000		35	65.23	285.7			54.1198	56.6958
[illegible]004	AIR PRODUCTS AND CHEMICALS, INC.	AIR PRODUCTS AND CHEMICALS, INC.	3383.4	487	5	AMINES PLANTS FLARE	A	36	0.8	700	1963		65.1	8.8	38.5			3.632762	3.660997
1130004	AIR PRODUCTS AND CHEMICALS, INC.	AIR PRODUCTS AND CHEMICALS, INC.	3383.4	487	6	METHYLAMINES PLANT NO.1 GAS FIRED HEATER	A	25	0.8	557	90		2		6.69			1.7647	
1130004	AIR PRODUCTS AND CHEMICALS, INC.	AIR PRODUCTS AND CHEMICALS, INC.	3383.4	487	7	HIGHER AMINES PLANT GAS-FIRED HEATER	A	25	2.8	1300	745		2	1.574	6.895				
1130004	AIR PRODUCTS AND CHEMICALS, INC.	AIR PRODUCTS AND CHEMICALS, INC.	3383.4	487	8	AMMONIA PLANT PRIMARY REFORMER	A	82	3.7	450	62750		97	69.77	305.6			214.9875	250.9461
1130004	AIR PRODUCTS AND CHEMICALS, INC.	AIR PRODUCTS AND CHEMICALS, INC.	3383.4	487	10	METHANOL - TWO REFORMERS	A	90	7.5	325	344003		129	28.0068	122.675			209.049277	241.785682
1130004	AIR PRODUCTS AND CHEMICALS, INC.	AIR PRODUCTS AND CHEMICALS, INC.	3383.4	487	11	METHANOL PLANT -THREE(3) NAT. GAS ENGINES	A	25	2.5	350	18400		62	224.2	981.9			915.6935	1038.965
1130004	AIR PRODUCTS AND CHEMICALS, INC.	AIR PRODUCTS AND CHEMICALS, INC.	3383.4	487	22	NITRIC ACID PLANT No.1 Catalytic Combustor	A	71	3	350	41612		98	45.625	199.8			79.3866	11.607225
1130004	AIR PRODUCTS AND CHEMICALS, INC.	AIR PRODUCTS AND CHEMICALS, INC.	3383.4	487	23	NITRIC ACID PLANT No.2 Catalytic Combustor	A	94	2.5	340	29797		101	33.13	145.1			53.84452	95.204
1130004	AIR PRODUCTS AND CHEMICALS, INC.	AIR PRODUCTS AND CHEMICALS, INC.	3383.4	487	26	AMMONIA PLANT - FOUR(4) NAT. GAS ENGINES	A	20	1.7	900	18400		135	179	785.2			601.7875	656.0995
1130004	AIR PRODUCTS AND CHEMICALS, INC.	AIR PRODUCTS AND CHEMICALS, INC.	3383.4	487	27	PDL INCINERATOR	A	15	0.25	100	50		17	1.62	7.1				
1130004	AIR PRODUCTS AND CHEMICALS, INC.	AIR PRODUCTS AND CHEMICALS, INC.	3383.4	487	60	METHYLAMINES PLANT NO.4 GAS-FIRED HEATER	A	25	0.8	557	186	79	6.2						
1130004	AIR PRODUCTS AND CHEMICALS, INC.	AIR PRODUCTS AND CHEMICALS, INC.	3383.4	487	62	FACILITY-WIDE FUGITIVES	A												
1130004	AIR PRODUCTS AND CHEMICALS, INC.	AIR PRODUCTS AND CHEMICALS, INC.	3383.4	487	65	STORAGE TANKS (4)	A							2.9	12.8				
1130005	EXXONMOBIL PRODUCTION COMPANY	ST REGIS TREATING FAC AND JAY GAS PLANT	3416.04	482.87	34	Three Sulfur Recovery Plants (2, 3, & 4)	A	250	3	900									
1130005	EXXONMOBIL PRODUCTION COMPANY	ST REGIS TREATING FAC AND JAY GAS PLANT	3416.04	482.87	36	Four 1200 HP JCSWD Saturn NG fired Turbines	A	35	2.5	800	6465		22						
1130005	EXXONMOBIL PRODUCTION COMPANY	ST REGIS TREATING FAC AND JAY GAS PLANT	3416.04	482.87	37	JCSWD 3600 HP NG fired Solar Centaur turbine	A	35	2.5	800	17333		58.9	12	52.6	12		11.18	1.66
1130005	EXXONMOBIL PRODUCTION COMPANY	ST REGIS TREATING FAC AND JAY GAS PLANT	3416.04	482.87	38	1000 HP Ingersol Rand Compressor engine with catalytic cnvtr	A	30	1	800	3726		79.1	5	21.9			21.14	12.42
1130005	EXXONMOBIL PRODUCTION COMPANY	ST REGIS TREATING FAC AND JAY GAS PLANT	3416.04	482.87	40	Jay 2, 3, & 4 Process Heaters	A	60	4									66.48	66.48
1130005	EXXONMOBIL PRODUCTION COMPANY	ST REGIS TREATING FAC AND JAY GAS PLANT	3416.04	482.87	41	Jay 2, 3, and 4, stabilizer bottom heaters	A	60	3									33.2	33.2
1130005	EXXONMOBIL PRODUCTION COMPANY	ST REGIS TREATING FAC AND JAY GAS PLANT	3416.04	482.87	42	Jay Plant Hot Oil Heater	A	60	2									32.59	32.59
1130005	EXXONMOBIL PRODUCTION COMPANY	ST REGIS TREATING FAC AND JAY GAS PLANT	3416.04	482.87	43	Two NG fired 14,300 HP Water Flood Turbines	A	30	12.5									333.46	361.71
1130005	EXXONMOBIL PRODUCTION COMPANY	ST REGIS TREATING FAC AND JAY GAS PLANT	3416.04	482.87	44	Six 1,000 HP NG fired Ingersol Rand Compressor Engines	A	30	1									488.66	449.17
1130005	EXXONMOBIL PRODUCTION COMPANY	ST REGIS TREATING FAC AND JAY GAS PLANT	3416.04	482.87	45	One 5000 HP NG fired Cooper Bessemer "A" Engine	A	22	3									510.78	464.04
1130005	EXXONMOBIL PRODUCTION COMPANY	ST REGIS TREATING FAC AND JAY GAS PLANT	3416.04	482.87	46	One 2500 HP NG fired Cooper-Bessemer "B" Engine	A	22	3									260.82	252.33
1130168	SANTA ROSA ENERGY LLC	SANTA ROSA ENERGY CENTER	3381.53	488.97	1	167MW Gas Combustion Turbine (Phase II Acid Rain Unit)	A	200	19	205	1073204		63.1	64.1	280.75	106	464.28		
1130168	SANTA ROSA ENERGY LLC	SANTA ROSA ENERGY CENTER	3381.53	488.97	1	167MW Gas Combustion Turbine (Phase II Acid Rain Unit)	A	200	19	205	1073204		63.1	64.1	280.75	42.4	185.71		
1130168	SANTA ROSA ENERGY LLC	SANTA ROSA ENERGY CENTER	3381.53	488.97	1	167MW Gas Combustion Turbine (Phase II Acid Rain Unit)	A	200	19	205	1073204		63.1	64.1	280.75	64.1	280.75		
1130173	GULF POWER COMPANY	COGENERATION PLANT (PEA RIDGE PLANT)	3384.32	486.87	1	COGENERATION UNITS A,B AND C.	A	60	4	325	41058		54.5	60	187.1		187	64.56	110.5755
1130173	GULF POWER COMPANY	COGENERATION PLANT (PEA RIDGE PLANT)	3384.32	486.87	1	COGENERATION UNITS A,B AND C.	A	60	4	325	41058		54.5	60	187.1		187	64.56	110.5755
1130173	GULF POWER COMPANY	COGENERATION PLANT (PEA RIDGE PLANT)	3384.32	486.87	1	COGENERATION UNITS A,B AND C.	A	60	4	325	41058		54.5	60	187.1			64.56	110.5755

Table D-4
Local PM Sources
Meeting 20D Criteria

FACILITY ID	OWNER/COMPANY	SITE NAME	NORTH (km)	EAST (km)	EU ID	EU DESCRIPTION	EU STATUS	STACK HT (ft)	DIAM (ft)	EXIT TEMP (F)	ACFM	DSCFM	VEL (ft/s)	Potential (lb/hr)	Potential (tpy)	Allowable (lb/hr)	Allowable (tpy)	2001 Actual (tpy)	2000 Actual (tpy)
[illegible]40	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	2	ADIPIC ACID SYNTHESIS, NOX THERMAL REDUCTION UNIT #1 TRU/SCR	A	60	4	435	71000		94	2.8	12.28				
[illegible]40	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	3	B & W BOILER #8 (STACK #1)	A	125	12	230	236943		34	0.63	2.75			2.727	
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	4	B & W BOILER #7 (STACK #2)	A	125	12	230	236943		34	0.63	2.75			6.5217	
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	5	#1 DOWTHERM VAPORIZER -NAT. GAS,OR #2 OIL (COMMON STACK W #	A	125	2.7	311	6318		18	PM					
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	7	"2 VAPORIZER- NAT. GAS OR #2 OIL	A	125	2.7	311	7198	4029	20	0.17	0.745				
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	8	#3 DOWTHERM VAPORIZER- NAT. GAS,OR #2 OIL (COM. STACK W #5)	A	125	2.7	311	7198	4029	20	PM					
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	9	#4 DOWTHERM VAPORIZER- NAT.GAS. OR #2 OIL, (COM. STACK W #1)	A	125	2.7	311	7198	4029	20	0.17	0.745				
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	10	#5 DOWTHERM VAPORIZER- NAT.GAS. OR #2 OIL (COM.STACK W #3)	A	125	2.7	311	7198	4029	20	0.17	0.745				
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	11	#6 DOWTHERM VAPORIZER- NAT. GAS OR #2 OIL(COMMON STACK #7)	A	125	2.7	311	7198	4029	20	0.17	0.745				
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	13	#7 VAPORIZER (COMMON STACK #6)	A	125	2.7	311	9798	5479	28	0.4	1.752				
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	14	CE BOILER #4 (USES STACK #5 IN COMMON WITH CE BOILER #3)	A	150	10	360	168664		35	9.2	40.3				
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	15	CE BOILER #5 (USES STACK #3 IN COMMON WITH CE BOILER #6)	A	150	10	360	168664		35	0.37					
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	16	CE BOILER #6 (USES STACK #3 IN COMMON WITH CE BOILER #5)	A	150	10	360	168664		35	0.3					
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	32	COGENERATION PLANT	A	100	15	300	799	491	75	3.9	17.1				
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	38	RESEARCH & DEVELOPMENT	A	33	0.3	200	100		23	PM					
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	49	HYDROGEN GENERATION FACILITY, PLANT #1	A	90	4.8	393	50257		46	PM					12.60896
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	50	ADIPIC ACID-BULK LOADING #1	A	60	1	86	12000		254	14.97				6	9.77
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	60	ADIPIC ACID DRYER BUILDING 485	A	54	1	136	7000	5180	148	1.31	5.74			0.215	0.27
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	61	ADIPIC ACID DRYER A, BLDG. 405	A	25	1.4	80	9000		97	6.9	30	6.9	30	2.206	3.88
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	62	ADIPIC ACID DRYER B, BLDG. 405	A	25	1.4	80	9000		97	6.9	30	6.9	30	1.765	3.87
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	63	ADIPIC ACID DRYER A, BLDG. 465	A	25	1.4	80	9000		97	9	39	9	39	4.545	5.9
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	64	ADIPIC ACID DRYER B, BLDG. 465	A	25	1.4	80	9000		97	9	39	9	39	4.593	3.46
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	73	ABRASIVE BLAST FACILITY	A	25	3	72	19080	19080	44	27	118	4.9	21.5	1.20099	1.20099
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	75	VAPORIZER NO.8	A	125	2.7	311	9798	5479	28	PM					
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	76	MALEIC ANHYDRIDE (MA)PLANT-UNCONTROLLED OFF GASES	A	125	3.5	158		60000		1.19	5.21				
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	79	DRYER	A	54	1	136		10500		1.35	5.91	1.35	5.91	0.297	0.341
0330040	SOLUTIA INC.	SOLUTIA INC.	3384.99	476.01	85	AREA 471 ALPHOX, SYNTHESIS, REFINING, RAW MATERIAL RECOVERY	A							PM					
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	1	Boiler #1 (Phase II Acid Rain Unit)	A	450	18	290	802500		52	42	230	126	230	0.4373	0.9486
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	1	Boiler #1 (Phase II Acid Rain Unit)	A	450	18	290	802500		52	42	230	42	230	0.4373	0.9486
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	2	Boiler #2 (Phase II Acid Rain Unit)	A	450	18	290	802500		52	42	230	42	230	0.4776	0.8313
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	2	Boiler #2 (Phase II Acid Rain Unit)	A	450	18	290	802500		52	42	230	126	230	0.4776	0.8313
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	3	Boiler #3 (Phase II Acid Rain Unit)	A	450	18	290	802500		52	55	301	165	301	0.6389	1.5379
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	3	Boiler #3 (Phase II Acid Rain Unit)	A	450	18	290	802500		52	55	301	55	301	0.6389	1.5379
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	4	Boiler #4 (Phase I & II Acid Rain Unit)	A	450	18	290	802500		52	109.7	600	109.67	600	46.162749	45.972368
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	4	Boiler #4 (Phase I & II Acid Rain Unit)	A	450	18	290	802500		52	109.7	600	329.01	600	46.162749	45.972368
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	5	Boiler #5 (Phase I & II Acid Rain Unit)	A	450	18	290	802500		52	109.7	600	329.01	600	43.541803	60.702917
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	5	Boiler #5 (Phase I & II Acid Rain Unit)	A	450	18	290	802500		52	109.7	600	109.67	600	43.541803	60.702917
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	6	Boiler # 6 (Phase I Acid Rain Unit)	A	450	23.2	320	2462700		97	370.5	1475	370.5	1475	188.215564	177.355845
03[illegible]0045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	6	Boiler # 6 (Phase I Acid Rain Unit)	A	450	23.2	320	2462700		97	370.5	1475	1111.4	1475	188.215564	177.355845
[illegible]45	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	7	Boiler #7 (Phase I Acid Rain Unit)	A	450	23.2	320	2462700		97	640.6	3507.5	1921.9	3507.5	245.786523	306.685981
[illegible]45	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	7	Boiler #7 (Phase I Acid Rain Unit)	A	450	23.2	320	2462700		97	640.6	3507.5	640.6	3507.5	245.786523	306.685981
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	8	Crist Plant Fly Ash Silos(2)	A	125	23.45	100	5452		0.2	PM					
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	9	Coal and Ash Materials Handling	A							PM				207.2	207.36
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	10	Fugitive PM Sources - On-Site Vehicles	A							PM					
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	11	General Purpose Internal Combustion Engines	A			400				PM				0.7806	0.63
0330045	GULF POWER COMPANY	CRIST ELECTRIC GENERATING PLANT	3381.36	478.27	13	Fugitive PM Sources - Sandblasting Operations	A							PM				0.452	0.452
0910031	UNITED STATES AIR FORCE	EGLIN AIR FORCE BASE	3369.6	542.6	6	2 boilers at Bldg. 2825. Rated cap. each = 15 MM Btu/hr	A	59	2	77				0.4	1.76			0.12	0.24
0910031	UNITED STATES AIR FORCE	EGLIN AIR FORCE BASE	3369.6	542.6	7	2 boilers at Bldg. 438. Rated cap. each = 11.716 MM Btu/hr.	A	59	2	77				PM				0	0.15
0910031	UNITED STATES AIR FORCE	EGLIN AIR FORCE BASE	3369.6	542.6	30	Unregulated Emission Sources	A							PM				3061.07	3567
0910031	UNITED STATES AIR FORCE	EGLIN AIR FORCE BASE	3369.6	542.6	33	750 BHP (31.4 MMBtu/hr) gas-fired Cleaver-Brooks boiler	A	14	2	385	9750	6118	51.7	0.314	1.37				
0910031	UNITED STATES AIR FORCE	EGLIN AIR FORCE BASE	3369.6	542.6	36	Internal Combustion Engines (generators, etc.)	A							PM					
0910031	UNITED STATES AIR FORCE	EGLIN AIR FORCE BASE	3369.6	542.6	37	Small Unregulated Boilers	A							PM					