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March 17, 2015

Brooksville Power Plant
10311 Cement Plant Road
Brooksville, FL 34601

David Read
Permitting Section Administrator
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RE: Title V Permit Modifications, Permit 0530380-002-AV
Facility ID: 0530380

Dear Mr. Read:

Brooksville Power Plant (Brooksville) is submitting this permit modification package to modify the Title V permit to correct various administrative oversights, omissions and engineering adjustments to the plant. In addition, Brooksville has included several requested clarifications that directly relate to plant operations.

Please call me at (352) 799-7881, ext 102, bill.obrien@ihipower.com, or Maggie Estrada, Vice President, IHI Power at (949) 330-7971, maggie.estrada@ihipower.com if there are any questions.

Sincerely,

William F. O'Brien

William O'Brien
Plant Manager

attachments

cc: SW District Office
M. Estrada (IHI Power)
M. Lee (Koogler and Associates)
Facility files

REQUEST FOR TITLE V PERMIT CORRECTIONS AND SUBMITTAL OF TITLE V PERMIT AND AIR OPERATION PERMIT APPLICATION CORRECTIONS

MARCH 2015

FLORIDA POWER DEVELOPMENT, LLC
FACILITY ID: 0530380
TITLE-V AIR PERMIT: 0530380-002-AV

10311 Cement Plant Road
Brooksville, FL 34601

Original Title V Air Permit Application Submittal: March 2014
Submission Date for corrections: March, 2015

308-14-01

INTRODUCTION

On March 28, 2014, FPD submitted a Title V air permit operation application to authorize continued operation of the Brooksville Power Plant following a conversion from coal to biomass, and the Department issued the final Title V permit on November 24, 2014. Since that time, FPD identified some relatively minor errors or omissions in the application and Title V permit. As required under Rule 62-213.420(1)(b)3, F.A.C., FPD is providing corrections to the Title V application on file with the Department, as explained in more detail below. In addition, FPD respectfully requests that the Department make corresponding and additional corrections in the permit, as appropriate. Furthermore, FPD is submitting language to better refine permit conditions for clarification purposes.

In addition to the narrative provided below, FPD is providing five attachments. Attachment 1 shows the locations of all emission points and emission units on a series of aerial photographs. Attachment 2 provides updated emission estimates. Attachment 3 contains an electronic copy of the emission calculations on a CD. Attachment 4 provides flow charts of EU001 emission points. Attachment 5 includes the corrected pages for the Title V air permit application and application form. For purposes of consistency and to be more accurate, FPD used new emission point names and references in all of the attachments.

FPD's requested clarifications and/or corrections to the Title V permit are listed below, followed by a list of the corrections it is making to the application. Suggested changes to permit language are highlighted in yellow for emphasis.

Title V permit corrections:

1) EU002 (Boiler): Correct for 20% opacity one 6-min block per hour allowance
2) EU001 (Biomass handling and storage): Revise EU001 for two reclaim hoppers
3) EU003 (Ash storage): Request to Remove EP001
4) Facility Wide Conditions: Correct List of Reasonable Precautions to Minimize Unconfined Particulate Matter Emissions

5) EU002 (Boiler): Incorporate CO Catalyst Requirement Clarification Letter from FDEP

6) EU002 (Boiler): Revise condition to include As Necessary to requirement to use SO2 controls.

7) EU001: (Biomass handling, storage, truck traffic): Clarify Baghouse (A-conveyor) design specifications have not changed

8) EU005: The emergency engine (EU005) is an affected facility but is not subject to applicable requirement.

9) Facility Wide Conditions: Delete requirement for truck washing for biomass fuel trucks that do not enter main cement plant.

10) E002 (Boiler): Revise source test reports to remove VOC and SAM reporting as these constituents are not sampled for during the annual compliance test.

11) E002 (Boiler): Refine startup and shutdown definitions.

12) E002 (Boiler): Reclassify boiler as a Hybrid Suspension Grate boiler.

Title V Air operation permit application corrections:

13) Appendix CEMS: Revise how emission data will be averaged to demonstrate compliance with annual emission limits.

14) EU001 (Biomass handling, storage and processing, and truck traffic): Correct air operation permit application and application form for EU001

15) EU003 (Ash handling, storage and shipment): Correct air permit application and application form for EU003

Requested Title V air permit corrections:

1) EU002 (Boiler): Correct for 20% opacity one 6-min block per hour allowance

The AC permit, 0530380-001-AC, clearly states in condition B.13 that the opacity limit is 10% 6-minute blocks with 20% opacity allowed for one 6-minute block per hour during normal operations. The following image of the permit highlights that condition.

13. Emission Limits: Emissions from grate-suspension boiler shall not exceed the following standards.

Pollutant	Stack Test	CEMS/COMS Based Averages	
NO_X [a]	Not applicable	135 lb/hour 12-month, rolled monthly	0.20 lb/MMBtu 30-day basis
SO_2 [b]	Not applicable	135 lb/hour,12-month, rolled monthly	
CO [c]	Not applicable	40.5 lb/hr, 12-month, rolled monthly	
Opacity [d]	Not applicable	10 percent (%) opacity (6-minute blocks) 20% opacity (one 6-minute block per hour)	
PM/PM_{10} [e]	11.7 lb/hr	Not applicable	
VOC [f]	9.0 lb/hr	Not applicable	
SAM [g]	2.2 lb/hr	Not applicable	
NH_3 Slip [h]	10 ppmvd @ 7% O_2	Not applicable	

The Title V permit does not include this allowance from the AC permit and the Title V permit does not include the table (other than in an unenforceable appendix to the permit). Although Title V permit condition B.19 references the 001-AC/PSD permit, the condition omits the allowance of one 6-minute block per hour at 20% opacity for normal operations.

EU002: Proposed Changes to Permit Language

As of now, Condition B.19 states:

> **B.19.** Visible Emissions. As determined by COMS, visible emissions shall not exceed 10% opacity. During startups, shutdowns and malfunctions, visible emissions shall not exceed 20% opacity (6-minute blocks) except for one 6-minute block/hour of 27% opacity. [Rule 62-204.800 and 62-296.406, F.A.C.; NSPS Subpart Db of 40 CFR 60.43b; and, Permit No. 0530380-001-AC (PSD-FL-090E)]

FPD requests that the Department correct AC permit Condition B.19 to state:

B.19. Visible Emissions. As determined by COMS, visible emissions shall not exceed 10% opacity except for one 6-minute block/hour of 20% opacity during normal operations. During startups, shutdowns and malfunctions, visible emissions shall not exceed 20% opacity (6-minute blocks) except for one 6-minute block/hour of 27% opacity. [Rule 62-204.800 and 62-296.406, F.A.C.; NSPS Subpart Db of 40 CFR 60.43b; and, Permit No. 0530380-001-AC (PSD-FL-090E)]

2) EU001 (Biomass storage and handling, truck traffic): Revise EU001 for two reclaim hoppers

EU001: Proposed Changes to Permit Language

Please revise EU001 general description statement in Section A to reflect only two reclaim hoppers. The AC permit general description for EU001 stated that "up to three reclaim hoppers" would be used. The permittee installed only two reclaim hoppers, and Condition 1.C in the AC permit referred to only two reclaim hoppers. Change the Title V permit to reflect two reclaim hoppers.

Biomass Boiler Feed System: From the fuel storage pile, the fuel is unloaded by two ~~three~~ reclaim hoppers. Each reclaim hopper is designed to process 100 TPH of biomass. Covered conveyors controlled by fabric or bin vent filters are used to reduce emission of PM. The fuel is then transferred to an enclosed building containing a sizing screen, magnetic separator and hog mill designed to process 200 TPH of biomass fuel. A baghouse will be used to control emissions of PM. The biomass fuel will be conveyed to the grate suspension boiler day bins to provide biomass fuel to the boiler at a design rate of 200 TPH.

3) EU003 (Ash storage): Request for Removal of EP001

Emission point (EP001) associated with the Filter Dust Bin originally included in the AC permit for FPD is actually part of the CEMEX Brooksville South Cement Plant operations and is listed in the cement plant's Title V permit. The chart below is from the AC permit for FPD listing the emissions points that were to be included in the construction permit.

Facility 05300380 EU ID No.	Emissions Unit Description	Facility 05300021 EU ID No.
001	Biomass Handling, Storage and Processing (New EU)	---
002	Woody Biomass-Fueled Grate-Suspension Boiler (Formerly Coal-Fired Boiler)	018
003	Ash and Handling, Storage and Shipment	---
Consists of old EUs:	Contaminated Fly Ash & Filter Dust Bin	036
	Filter Dust Bin	001
004	IDSIS Sorbent Handling and Storage	---
	Limestone Fines Storage	038
	Lime Dust Storage Bin	039
005	Emergency Equipment	
	500 kilowatt (kW) Emergency Generator	No EU #
	250 kW Emergency Ditch Pump	No EU #

FPD does not own, operate, or use this Filter Dust Bin (EP001) as part of the Brooksville Power Plant. This Filter Dust Bin (the old EU ID No. 001 when the cement and power plants were under a single Title V permit) remains permitted under the CEMEX Brooksville South Cement Plant's most recent Title V permit, 0530021-047-AV. Accordingly, FPD respectfully requests that the Department revise the Title V permit for the Brooksville Power Plant to eliminate references to this emission point (EP001).

EU003 (Ash storage): Proposed Changes to Permit Language

FPD requests the following revisions to the Title V permit as follows for the general description section of EU003 to correct the reference to the number of ash storage bins from two to one.

> The combustion of biomass in the converted boiler will result in the formation of bottom and fly ash. Bottom ash is collected from the boiler by a submerged drag-chain conveyor, which delivers the wet ash to a storage area. The storage area is located on a level and impervious surface surrounded on three sides by retaining walls. The bottom ash is handled in the storage area using mechanical means such as front-end loaders. The bottom ash will be sent daily to the co-located cement plant for use in its kilns or shipped off site for disposal.
>
> The fly ash handling system consists of enclosed hoppers, drop points and conveyors associated with the collection and transfer of fly ash to one ~~two~~ storage bin~~s~~ from the ESP. The ESP is used to control emissions of PM from the biomass boiler. An enclosed conveyor is used to transport the fly ash from the ESP to the ash storage bin~~s~~. The storage bin~~s are~~ is equipped with a bin vent filter~~s~~ to minimize any PM emissions from the transfer operations. The fly ash shipment system consists of drop points and chutes

associated with the transfer of the fly ash from the storage bins to trucks for shipment to the co-located cement plant for use in its kilns or for removal of the ash off-site.

4) Facility Wide Conditions: Correct List of Reasonable Precautions to Minimize Unconfined Particulate Matter Emissions

FPD requests that the Department correct Title V permit Facility Wide Condition 5 to reflect the list of reasonable precautions to minimize unconfined particulate matter emissions from the power plant's air construction permit. FPD respectfully requests that the Department delete the current condition and insert in its place the following condition from the initial air construction permit (with the construction/demolition activities removed):

1. Unconfined Emissions of Particulate Matter: No person shall cause, let, permit, suffer or allow the emissions of unconfined particulate matter from any activity, including vehicular movement; transportation of materials; construction, alteration, demolition or wrecking; or industrially related activities such as loading, unloading, storing or handling; without taking reasonable precautions to prevent such emissions. Any permit issued to a facility with emissions of unconfined particulate matter shall specify the reasonable precautions to be taken by that facility to control the emissions of unconfined particulate matter. Appendix BMP of this permit provides a Best Management Plan (BMP) of reasonable precautions specific to the FPD facility to control fugitive PM emissions. General reasonable precautions include the following:
   (a) Paving and maintenance of roads, parking areas and yards;
   (b) Application of water or chemicals to control emissions from such activities as demolition of buildings, grading roads, construction, and land clearing;
   (c) Application of asphalt, water, oil, chemicals or other dust suppressants to unpaved roads, yards, open stock piles and similar activities;
   (d) Removal of particulate matter from roads and other paved areas under the control of the owner or operator of the facility to prevent re-entrainment, and from buildings or work areas to prevent particulate from becoming airborne;
   (e) Landscaping or planting of vegetation;
   (f) Use of hoods, fans, filters, and similar equipment to contain, capture and/or vent particulate matter;
   (g) Confining abrasive blasting where possible; and
   (h) Enclosure or covering of conveyor systems. In determining what constitutes reasonable precautions for a particular facility, the Department shall consider the cost of the control technique or work practice, the environmental impacts of the technique or practice, and the degree of reduction of emissions expected from a particular technique or practice.

   [Rule 62-296.320(4)(c), F.A.C.]

5) EU002 (Boiler) - Incorporate CO Catalyst Requirement Clarification Letter

Revise Title V permit, Condition B.8 to reflect the recent clarification letter from FDEP dated January 8, 2015.

Proposed Changes to Permit Language

B.8. Oxidation Catalyst. The permittee shall operate and maintain an oxidation catalyst, as needed, to control CO and VOC emissions to the emission standards specified in this section. The oxidation catalyst will also help control organic HAP emissions. [Permit No. 0530380-001-AC(PSD-FL-090E)]

The permittee may exercise its discretion to install the CO oxidation catalyst so long as the following CO emission limits are met:
• As determined by a continuous emissions monitoring system (CEMS), CO emissions shall not exceed 40.5 pounds per hour based on a 12-month rolling average rolled monthly; and
• With an effective Date of **1/31/2016** as determined by a CEMS, CO emissions shall not exceed 2,000 parts per million volume dry at 3% oxygen on a 10-day rolling average except during startup and shutdown.

The CO catalyst container must be maintained in an operational condition so that the catalyst can be reinstalled in a timely manner if required to meet the permitted CO emission limits. If such a condition arises, FPD must notify the Compliance Authority within 15 days prior to reinstalling the catalyst.
[FDEP authorization letter dated 1/28/15]

6) EU002 (Boiler)

Revise condition B.7. In-Duct Sorbent Injection System to include “as necessary”.

An IDIS shall consist of pumps, the metering and injection equipment required to inject the sorbent (lime, milled Trona, or sodium bicarbonate) into the grate-suspension boiler duct work to control SOx and HAP acid gas emissions as necessary.

7) EU001 (Biomass handling and storage, truck traffic) - Clarify Baghouse (A-conveyor) design specifications have not changed

Please revise AV permit Condition A.5 to reflect that the final engineering design of the baghouse (A-conveyor) did not change and therefore nothing further must be submitted. The initial VE testing of the baghouse indicated that the opacity from this baghouse was zero percent.

Proposed Changes to Permit Language

> **A.5.** Baghouse (A-Conveyor): Based on the preliminary design, the permittee shall operate and maintain a baghouse to control PM emissions from the sizing screen, magnetic separator and hog mill enclosure. The baghouse shall be designed and maintained to achieve an outlet dust loading rate of 0.02 grains per dry standard cubic feet (gr/dscf) in its exhaust. ~~Based on the final engineering design needs, additional baghouses may be installed as necessary to control fugitive dust from biomass handling, storage and processing emission unit. The Compliance Authority shall be notified 180 days before Brooksville Power Plant becomes operational of any final engineering design changes. Should the preliminary design change, the permittee shall provide final design details for all baghouses in the application for a Title V air operation permit along with a concurrent modification of this air construction permit.~~ [Rule 62-210.200(PTE), F.A.C.; and, Permit No. 0530380-001-AC (PSD-FL-090E)]

8) EU005: Clarify that the internal combustion engine (EU005) is an affected source but is not subject to applicable requirements.

To clarify that the emergency internal combustion engine is an affected source under 40 CFR 63 Subpart ZZZZ and also that no applicable requirements apply, FPD requests that the engine be moved to a regulated unit section of the Title V permit. In addition, because FPD intends to maintain the engine's emergency use status thus avoiding substantive requirements under Subpart ZZZZ, FPD requests that the permit confirm that the size of the engine is 610 brake horsepower (610) and that it was manufactured in 1962. The permit should also restrict use of the engine for purposes other than routine testing and emergency situations. The permit should also affirmatively state that the engine is not subject to notice or substantive requirements of 40 CFR 60 Subpart IIII or 40 CFR 63 Subpart ZZZZ.

9) Facility Wide Conditions

Please delete Condition FW.5.k. from the Title V permit. The biomass fuel trucks do not enter the main cement plant, but rather turn off Cement Plant Road prior to the entrance guard gate. Thus these vehicles do not contact the dust present at the cement plant and should not be subject

to the wheel washing requirement.

10) EU002 (Boiler):

Revise condition III.B.37 to remove the VOC and SAM emissions from the Stack Test Report because the VOC and SAM emissions do not need to be tested during the annual compliance test based on the Table 13, note f. and g. in 0530380-001-AC.

> f. VOC mass emission rate limit in pounds per hour per applicant's request and to avoid PSD. *Only initial stack test required to verify emission rate.*
> g. SAM mass emission rate limit in pounds per hour per applicant's request and to avoid PSD. *Only initial stack test required to verify emission rate.*

11) EU002 (Boiler):

The current startup and shutdown definitions are somewhat vague and therefore difficult to incorporate into the CEMS/COMS/DAS software. FPD utilized the following startup and shutdown definitions in the CEMS and COMS to aid the Control Room Operators (CROs) in operating the boiler in compliance with the Title V requirements:

> *Startup: A startup begins when fuel is added to the boiler and a flame is detected. A startup ends when the boiler reaches steady-state at an exhaust gas temperature of 1,750°F. A normal startup shall last no more than 24 hours. A refractory cure startup shall last no more than 96 hours.*
>
> *Shutdown: A shutdown begins when fuel feed is curtailed and the boiler begins cooling. A shutdown ends when any of the following occur:*
>
> - *The boiler temperature has reached 90°F for at least one hour.*
> - *Fuel feed resumes and the exhaust gas temperature reaches 1,750°F.*

12) EU002 (Boiler):

The boiler was initially classified as a Suspension Burner, however, the current federal definitions show that the boiler should now be classified as a Hybrid Suspension Burner with

regard to the Boiler MACT regulation. The primary reasons for this request are that the boiler does not meeting the following critieria:

- The federal definition of a suspension burner states that the moisture content of the fuel shall not exceed 20 percent, and
- The fuel is conveyed to the furnace in an airstream.

The change would result in modifying the CO and filterable PM emission limits for the NESHAPS regulation, which are conditions B.10.b. and B.13.c. to align with the Hybrid Suspension Grate Boiler emission limits as shown below. The differences in the emission limits in the Boiler MACT regulation are shown below:

Pollutant	Suspension Grate Burner	Hybrid Suspension Grate Burner
CO	2,400 ppmvd @ 3% O2	2,800 ppmvd @ 3% O2 (3 run average) or 900 ppmvd @ 3% O2 (30-day rolling average)
Filterable PM	5.1E-02 lbs/MMBtu	4.4E-01 lbs/MMBtu

Definitions from the Boiler MACT regulation:

Suspension burner means a unit designed to fire dry biomass/bio-based solid particles in suspension that are conveyed in an airstream to the furnace like pulverized coal. The combustion of the fuel material is completed on a grate or floor below. The biomass/bio-based fuel combusted in the unit shall not exceed 20 percent moisture on an annual heat input basis. Fluidized bed, dutch oven, pile burner, and hybrid suspension grate units are not part of the suspension burner subcategory.

Hybrid suspension grate boiler means a boiler designed with air distributors to spread the fuel

material over the entire width and depth of the boiler combustion zone. The biomass fuel combusted in these units exceeds a moisture content of 40 percent on an as-fired annual heat input basis. The drying and much of the combustion of the fuel takes place in suspension, and the combustion is completed on the grate or floor of the boiler. Fluidized bed, dutch oven, and pile burner designs are not part of the hybrid suspension grate boiler design category.

FPD's Title V air permit application corrections:

13) Appendix CEMS: Revise how emission data will be averaged to demonstrate compliance with annual emission limits.

The Title V permit currently describes how to determine the Rolling 12-month Average (Appendix CEMS, Condition 15) as follows:

- Compliance shall be determined after each operating month by calculating the arithmetic average of all the valid hourly averages in that month and then calculating the arithmetic average of that operating month with the preceding 11 operating month averages in units of tons per year.

Brooksville proposes to clarify that calculation method to utilize the operating hours in the 12-month averaging period directly rather than use an average of an average value. :

- Compliance shall be determined after each operating month by ~~calculating the arithmetic average of all the valid hourly averages in that month and then calculating the arithmetic average of that operating month with the preceding 11 operating month averages in units of tons per year.~~ averaging all of the valid operating hour emissions in the preceding rolling 12 months to obtain the annual average in lbs/hr.

Brooksville also proposes to begin the 12-month rolling average with the restart that commenced in 2015. The reason behind this request is the Brooksville Biomass Plant only operated intermittently for 5 months in 2014, during which time the facility encountered engineering design issues. The plant was forced to shut down and not operate for 9 months to allow engineering and implementation of design refinements. Thus, we believe it is appropriate to commence the 12-month rolling averages starting in February 2015.

14) EU001 (Biomass handling, storage and process, and truck traffic)

FPD is updating the estimated particulate matter (PM) emissions to reflect a fourth unloading

hopper and to reflect minor corrections in emission calculations. The total amount of material to be unloaded is not changing, and therefore would not cause a change in annual emissions. The fourth unloading area, already reflected in the Title V permit, will allow for improved truck traffic flow. FPD has updated the process flow diagram to reflect the fourth hopper, which FPD constructed in 2012 during the original construction of Emission Unit 001. FPD is providing updated pages to the application reflecting the additional hopper, its location, and its estimated emissions.

As noted above, Attachment 1 provides an updated series of aerial photographs, and Attachment 2 provides revised emission calculations.

Table 1 provides information regarding the emissions associated with EU001. The table divides emissions from EU001 into two broad categories. This approach is similar to how the AC permit categorized the emissions. The two categories are stack out and reclaim operations. Emissions from the stack out operations include emissions from the trucks hauling in biomass, unloading the biomass, and transferring the biomass to the stack. The second category is for reclaim operations, which start with pulling the biomass (i.e., reclaiming it) from the stacks and sending to the boiler or to another part of the stack. Within each of these two categories, the "emission sources" are noted in the third column. The emission points for each source are provided in column 4. Note that some sources emit through a single emission point. Column 5 provides a description of each emission point. Column 6 describes the VE limit for those locations that can be tested. Note that a number of the emissions sources are fugitive and cannot be tested. Columns 7-12 show the potential emissions from each emission source.

Detailed calculations for stack out and reclaim operations are included in Tables 2 and 3 in Attachment 2. Table 4 shows details of the inputs to the calculations. These tables are based generally on the tables in the AC permit application but include additional transfer points and revised emissions data based on the final design of the biomass handling and storage operations.

15) EU003 (Ash handling, storage and shipment):

As stated in the Introduction section, emission point 001 associated with EU003 is part of the CEMEX Brooksville South Cement Plant operations and is listed in the cement plant's Title V

permit. FPD does not own, operate, or use this Filter Dust Bin as part of the Brooksville Power Plant. This emission point EP001 (referred to as Emission Unit 001 in previous joint Title V permits with CEMEX) remains permitted under the CEMEX Brooksville South Cement Plant's most recent Title V permit, 0530021-047-AV. Accordingly, FPD is eliminating references to this emission point (EP001) in the air permit application and application forms.

FPD is also correcting the potential to emit calculations for EU003 to reflect removal of this emission point (EP001). Note that EP036 is the only source of emissions from this unit. Note also that all fugitive emissions from ash handling are vented to the boiler (EU002) and are accounted for in the emissions from EU002. FPD is providing the corrected values for EU002 in Attachment 2, Table 5.

Attachment 1: Aerial photographs identifying Emission Units and Emission Point locations

Attachment 2: Emission tables

Table 1: Revised emission calculations for EU001 (Biomass storage and handling, truck traffic)

Table 2: Revised calculations for stack out operations

Table 3: Revised calculations for reclaim operations

Table 4: Details of the inputs for tables 2 and 3

Table 5: Revised calculations for EU002 (Boiler) to reflect that all fugitive emissions from ash handling are vented to the boiler (EU002) and are accounted for in the emissions from EU002.

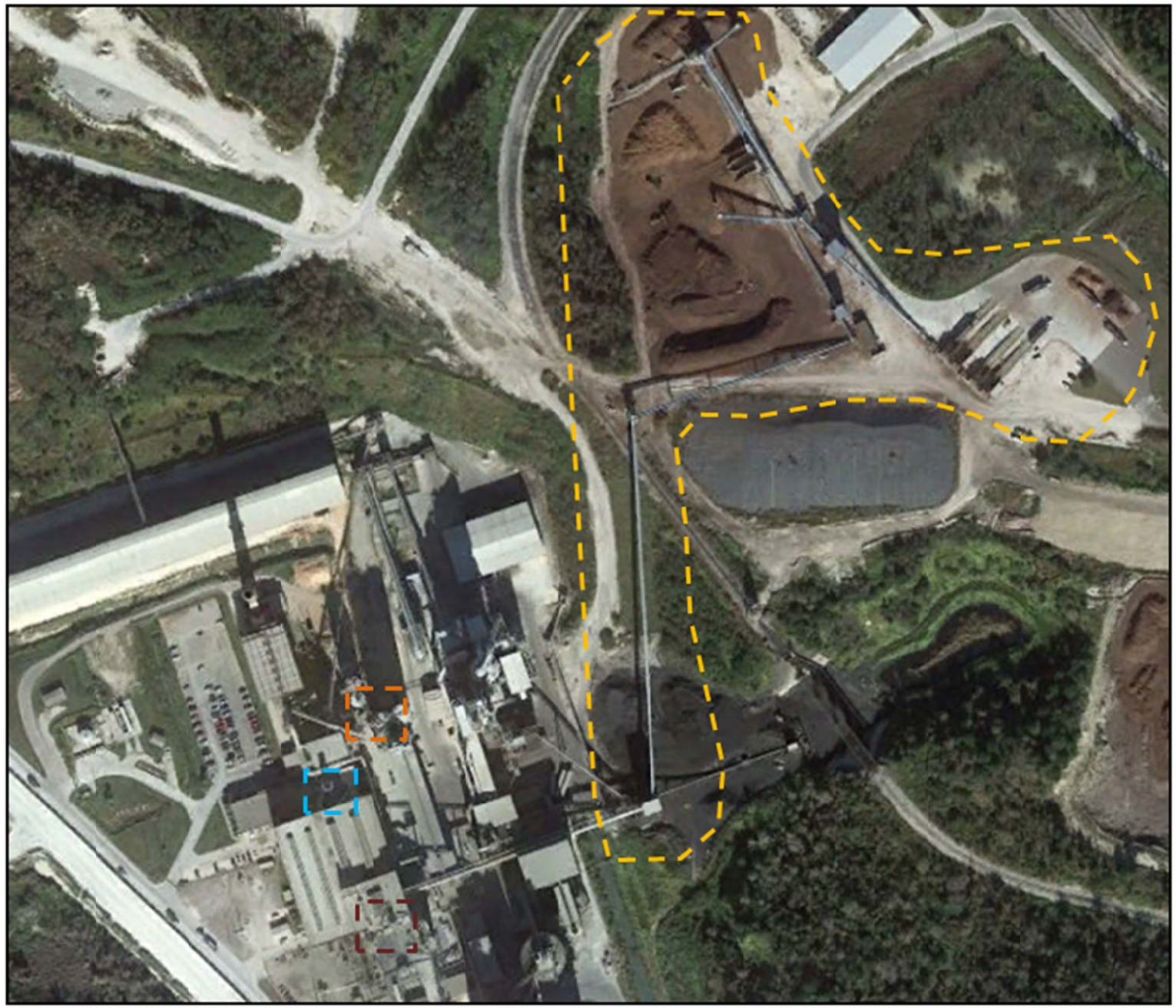
Attachment 3: Electronic copy - spreadsheets of Calculations (computer disk in addition to printout)

Attachment 4: Flow charts for EU001 (Biomass handling and storage, and truck traffic)

Attachment 5: Updated Title V air permit application form

Attachment 1: Aerial Photographs identifying Emission Units and Emission Points locations

Figure 1.Overview of Location of Emissions Units – EU001 to EU004



Perimeter of EU001	
Perimeter of EU002	
Perimeter of EU003	
Perimeter of EU004	

Figure 2. Overview of Emissions Unit 1 – EU001.

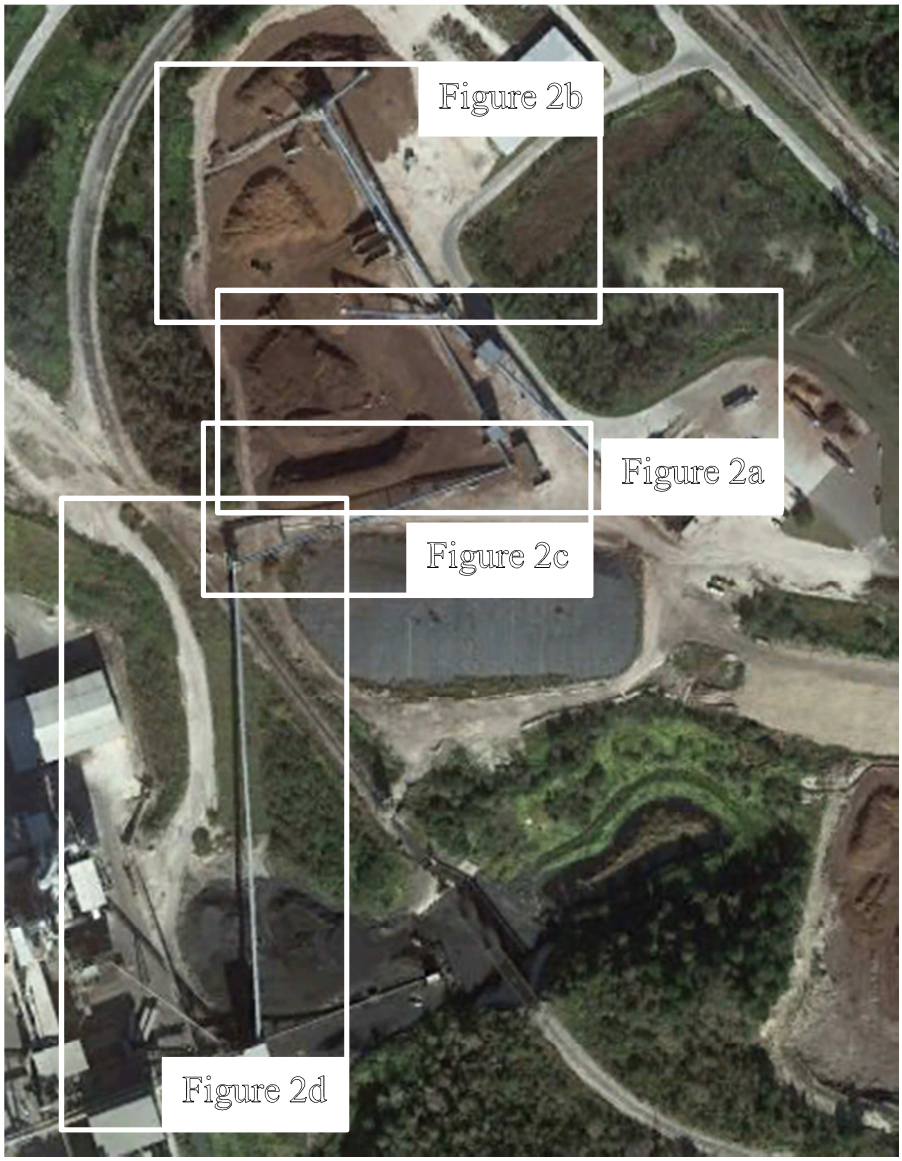


Figure 2a. First process section of EU001.

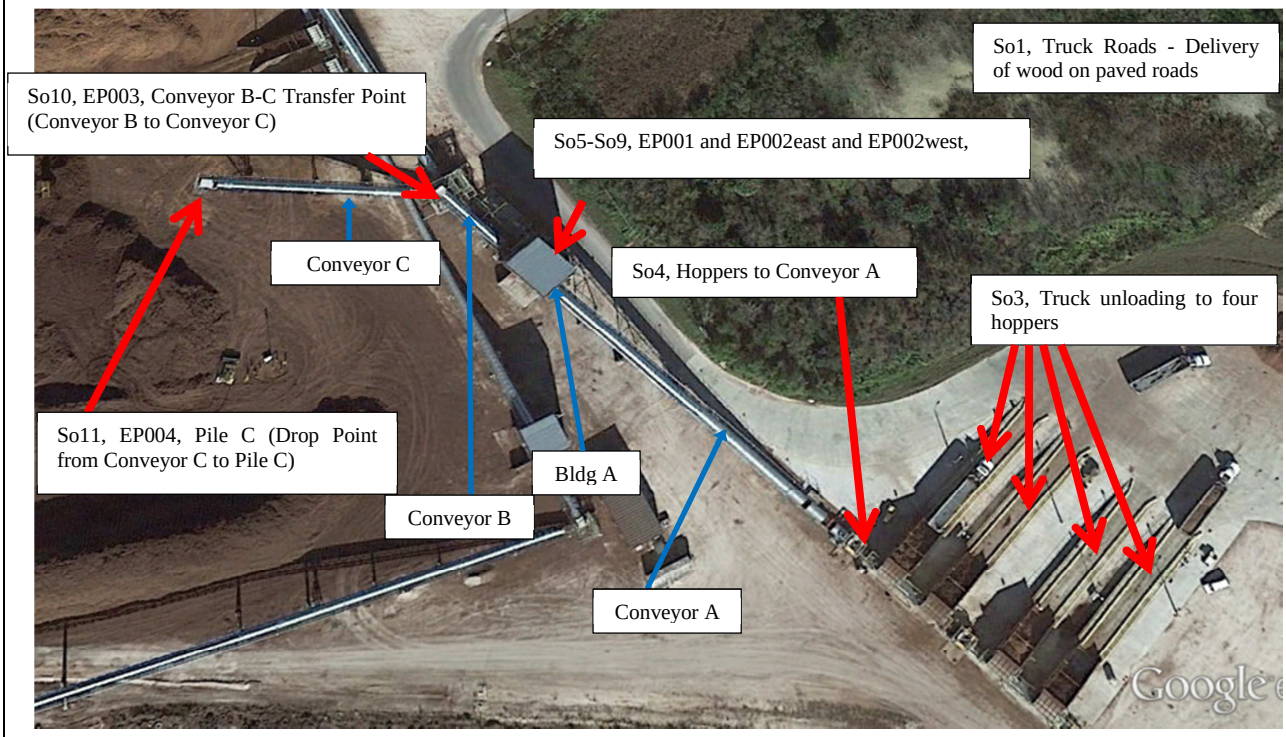


Figure 2b. Second process section of EU001.

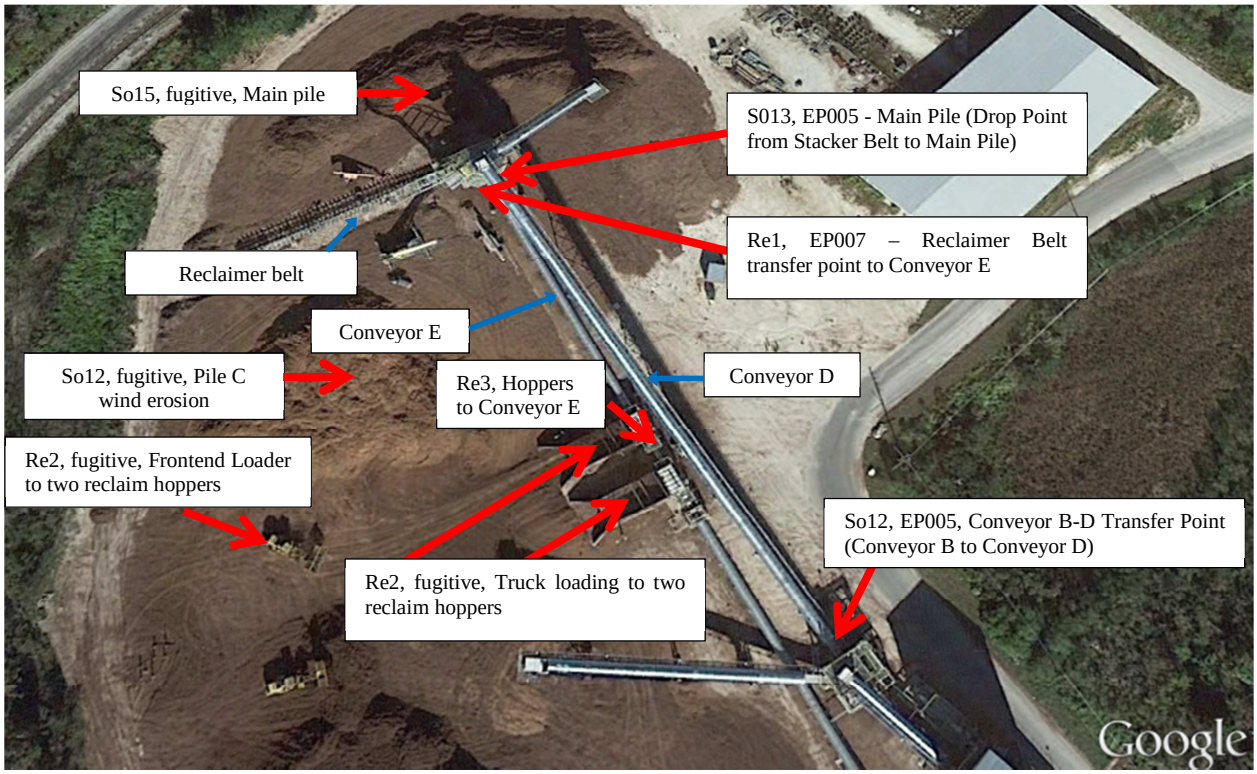


Figure 2c. Third process section of EU001.

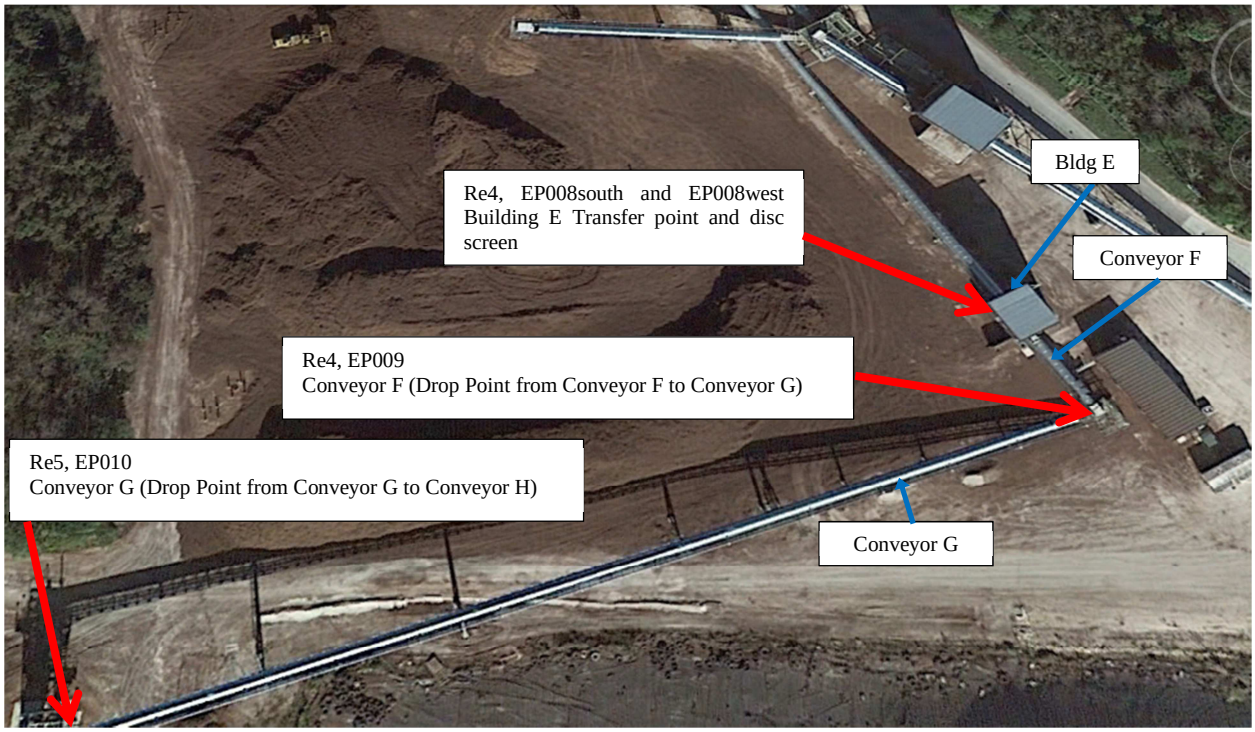


Figure 2d. Fourth portion of EU001.

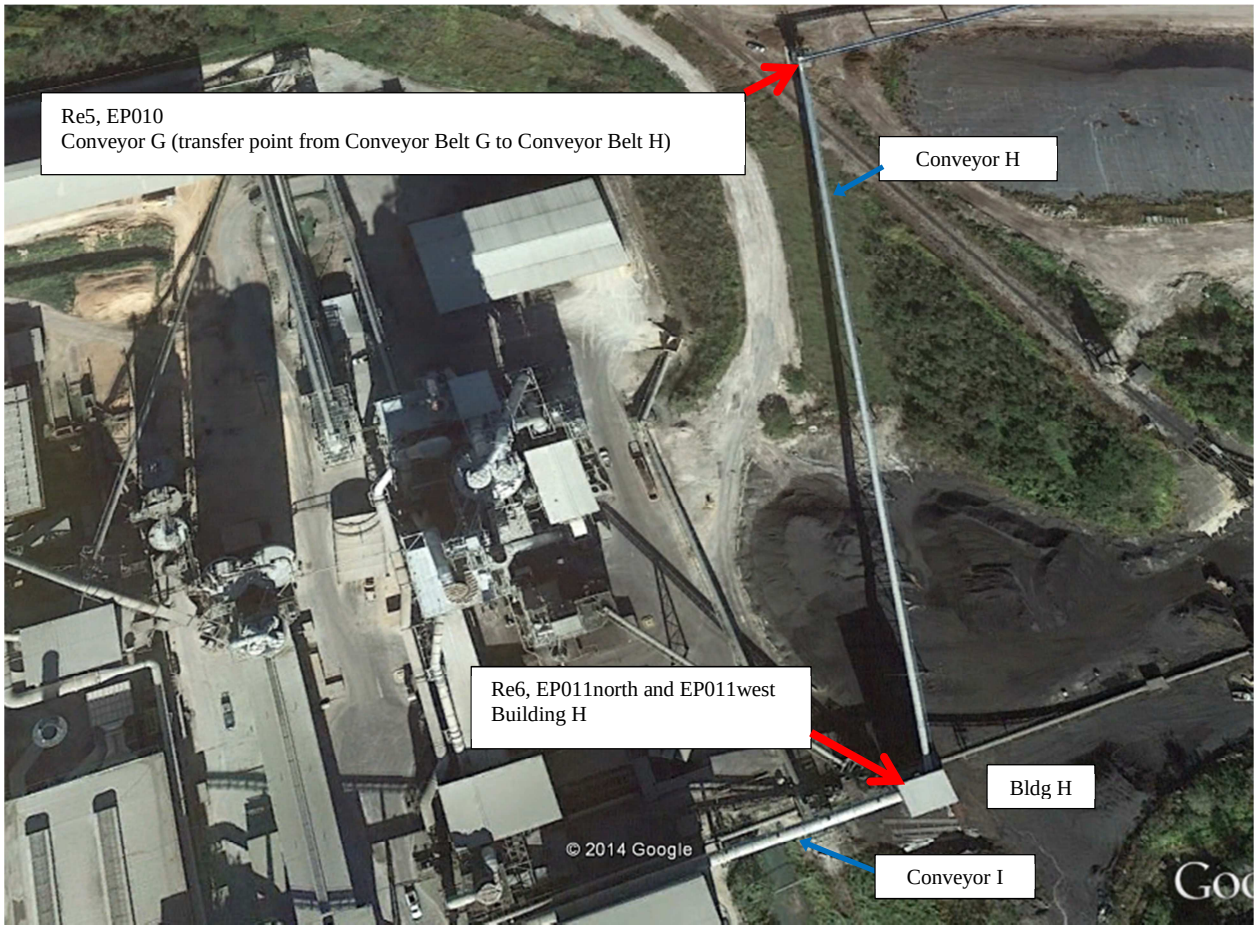
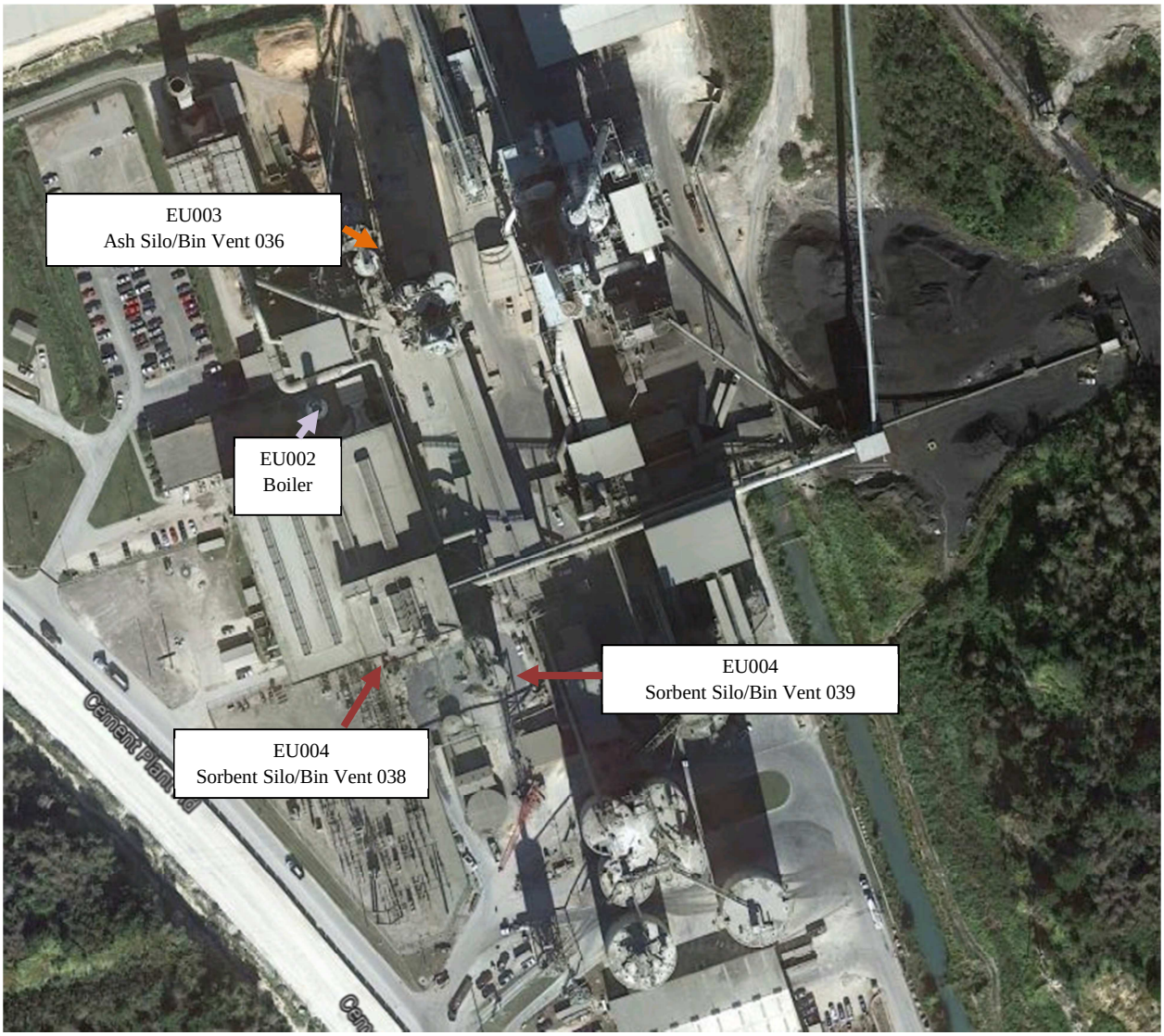


Figure 3. Location of Emissions Units and regulated emission points – EU002 to EU004



Attachment 2: Emissions Tables

Table 1: Emission Unit Description and Regulated Emission Points
Florida Power Development, LLC
10311 Cement Plant Road
Brooksville, Florida 34601
0530380-002-AV Resubmittal March 2015

Emission Unit		Emission Source*	Emission Point	Source / Description	VE Limit % **	PM lb/hr	PM ton/yr	PM10 lb/hr	PM10 ton/yr	PM2.5 lb/hr	PM2.5 ton/yr
Emission Unit 001 - Biomass Handling, Storage and Processing											
EU-001	Stack out Operations	So1	fugitive	Truck Roads - Delivery of wood on paved roads	not required	1.096	2.400	0.219	0.480	0.054	0.118
		So2	fugitive	Frontend Loaders - Unpaved Roads	not required	0.389	1.706	0.119	0.522	0.012	0.052
		So3	fugitive	Truck unloading to four hoppers	not required	0.009	0.008	0.004	0.004	0.001	0.000
		So4	enclosed	Hoppers to Conveyor A (enclosed and vented to Building A - baghouse)	Note So4 to So8 emit thru baghouse, EP-001, 5%	0.009	0.008	0.004	0.004	0.001	0.000
		So5		Conveyor A drop point to Screen		0.009	0.008	0.004	0.004	0.001	0.000
		So6		Building A (w baghouse) - Screen		0.015	0.067	0.005	0.023	0.005	0.023
		So7		Screen drop point to Hogmill		0.009	0.008	0.004	0.004	0.001	0.000
		So8		Building A (w baghouse) - Hogmill		0.038	0.166	0.017	0.074	0.017	0.074
			EP-001	Building A - baghouse for screen and hogmill							
		SO9		Building A transfer point A-B (Conveyor Belt A to Conveyor Belt B)	Note So9 emits thru both EP-002east and west 10/20%	0.009	0.008	0.004	0.004	0.001	0.000
			EP-002east	Building A - Screen Vent East							
			EP-002west	Building A - Screen Vent West							
		So10	EP-003	Conveyor B-C Transfer Point (Conveyor B to Conveyor C)	10/20%	0.009	0.008	0.004	0.004	0.001	0.000
		So11	EP-004	Pile C (Drop Point From Conveyor C to Pile C)	10/20%	0.012	0.010	0.005	0.005	0.001	0.001
		So12	fugitive	Pile C wind erosion	not required	0.223	0.195	0.112	0.098	0.017	0.015
		So13	EP-005	Conveyor B-D Transfer Point (Conveyor Belt B to Conveyor Belt D)	10/20%	0.009	0.008	0.004	0.004	0.001	0.000
		So14	EP-006	Main Pile (Drop Point from Stacker Belt to Main Pile)	10/20%	0.012	0.010	0.005	0.005	0.001	0.001
		So15	fugitive	Main Pile wind erosion	not required	0.223	0.195	0.112	0.098	0.017	0.015
	Reclaim Operations	Re1	EP-007	Reclaimer Belt transfer point (Reclaimer Belt to Conveyor Belt E)	10/20%	0.001	0.001	0.000	0.001	0.000	0.000
		Re2	fugitive	Truck loading to two reclaim hoppers	not required	0.004	0.008	0.002	0.004	0.000	0.001
		Re3	enclosed	Reclaim Hoppers to Conveyor E (vented Building E)	not required	0.001	0.001	0.000	0.001	0.000	0.000
		Re4		Building E transfer point E-F (Conveyor Belt E to Conveyor Belt F) includes disc screen	Note Re3emits thru both EP-008south and west 10/20%	0.001	0.001	0.000	0.001	0.000	0.000
			EP-008south	Building E Screen Vent South							
			EP-008west	Building E Screen Vent West							
		Re5	EP-009	Conveyor Belt F transfer point (Conveyor Belt F to Conveyor Belt G)	10/20%	0.001	0.003	0.001	0.001	0.000	0.000
		Re6	EP-010	Conveyor Belt G transfer point (Conveyor Belt G to Conveyor Belt H)	10/20%	0.001	0.001	0.000	0.001	0.000	0.000
		Re7		Building H transfer point H-I (Conveyor Belt H to Conveyor Belt I)	Note Re6 emits thru both EP-011 north and west 10/20%	0.001	0.001	0.000	0.001	0.000	0.000
			EP-011north	Building H Screen Vent North							
			EP-011west	Building H Screen Vent West							
			fugitive	Truck Roads - Delivery of lime on paved roads	not required	0.002	0.009	0.000	0.002	0.000	0.000
						lb/hr	**ton/yr**	**lb/hr**	**ton/yr**	**lb/hr**	**ton/yr**
					EU001 Totals	2.08	4.83	0.63	1.34	0.13	0.30
Emission Unit 002 - Woody Biomass-Fueled Grate-Suspension Boiler											
EU-002			EP-018	Woody Biomass-Fueled Grate-Suspension Boiler	10	11.7	51.2	11.7	51.2	7.6	33.3
Emission Unit 003 - Ash and Handling, Storage and Shipment											
EU-003			EP-036	Ash Silo/bin vent 036	10	1.9	7.4	0.3	1.2	0.1	0.5
Emission Unit 004 - IDSIS Sorbent Handling and Storage											
EU-004				Sorbent Silo/bin (EU004 data from 0530380-001-AC permit application)	5	0.77	3.04	0.36	1.44	0.055	0.02
Emission Unit 005 - Emergency Equipment											
EU-005***			Emerg500gen	500 kw emergency generator (610 hp)		1.34	0.34	1.34	0.34	1.34	0.34
					Facility Wide Totals		**66.89**		**55.56**		**34.40**

* Emission source ID includes "So" for stack out operations and "Re" for Reclaim operations. IDs are used in Figure 2a-d to identify location of each emission source
** VE limits are specified in 0530380-002-AV permit, baghouses 5%, all fugitive sources 10% with one 6-min block per hour up to 20%. See permit conditions A.6 and A.7. subject to general FDEP VE limit of 20% (cite rule).
Emission points "EP" identify points to be VE tested. Exempt locations are not required to be VE tested and only subject to general FDEP VE limit of 20% (cite rule).
*** PM emissions based on AP-42, Table 3.3-1, all PM < 1 um, 0.0022 lb/hp-hr.

Table 2: EU001 Material Handling Operations Emission Estimates (Stack Out)

Parameters		Units Flow Diagram ID	Truck Roads - Delivery of wood on Paved Roads So1	Frontend Loaders - Unpaved Roads So2	Truck unloading to four hoppers So3	Hoppers to Conveyor A So4	Conveyor A Screen So5	Building A (w baghouse) - Screen So6	Screen to Hogmill So7	Building A (w baghouse) - Hogmill So8	Building A transfer point A-B So9	Conveyor belt B-C transfer point So10	Pile C Wind Erosion So11	Pile C Drop point So12	Conveyor belt B-D transfer point So13	Main Pile Drop point So14	Main Pile Wind Erosion So15
Operational Data																	
Activity, hours	Daily	(hrs/day)	12	24	12	12	12	12	12	12	12	12	24	12	12	12	24
days	Annual	(days/yr)	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365
Material Handling Data																	
Material Type			Wood chips	Wood chips	Wood chips	Wood chips	Wood chips	Wood chips	Wood chips	Wood chips	Wood chips	Wood chips	Wood chips	Wood chips	Wood chips	Wood chips	Wood chips
Material throughput, ton/hr (design rate)			168	84	168	168	168	168	168	168	168	168	168	168	168	168	168
ton/day	Daily	(tons/day)	2,018	2,018	2,018	2,018	2,018	2,018	2,018	2,018	2,018	2,018	2,018	2,018	2,018	2,018	2,018
ton/y	Annual	(tons/yr)	736,547	736,547	736,547	736,547	736,547	736,547	736,547	736,547	736,547	736,547	736,547	736,547	736,547	736,547	736,547
Moisture content (M), %		%	NA	NA	35	35	35	35	35	35	35	35	35	35	35	35	35
Number of transfers		No.	NA	NA	1	1	1	1	1	1	1	1	NA	1	1	1	NA
Miles per day of road transport	Daily Avg = Annual Avg	No.	117	40.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Miles per truck round trip	Daily Avg = Annual Avg	No.	1.4	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Number of truck trips	Daily Avg = Annual Avg	No.	81	159	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Storage Pile Data																	
Pile Description (Shape)													circular				circular
Average Pile Height (ft)													40				40
Pile Diamter (ft)													425				425
Size (ft^2)													141,484				141,484
Size (acres)													3.25				3.25
General / Site Characteristics																	
Mean wind speed, mph	Daily	mph	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5
	Annual	mph	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
Particle size multiplier, PM (k)			0.011	4.9	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	1	0.74	0.74	0.74	1
Particle size multiplier, PM_{10} (k)			0.0022	1.5	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.5	0.35	0.35	0.35	0.5
Particle size multiplier, $PM_{2.5}$ (k)			0.00054	0.15	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.075	0.053	0.053	0.053	0.075
Days of Precipitation greater than or	Short term		0	0									0				0
equal to 0.01 inch (p)	Annual		30	30									30				30
Time (%) that unobstructed wind speed	Short Term												153				153
exceeds 5.4 m/s at mean pile height (f)	Annual												30.6				30.6
Silt content (s), %			1	0.25	NA	NA	NA	NA	NA	NA	NA	NA	0.25		NA		0.25
Emission Control Data																	
Emission Control Method			Water Sprays	Low Drop Point	Low Drop Point	Low Drop Point	Low Drop Point	baghouse	Low Drop Point	baghouse	Low Drop Point	Low Drop Point	Open pile with water sprays	Water Sprays	Low Drop Point	Water Sprays	Open pile with water sprays
Emission Control Removal Efficiency, %		%	60	70	70	70	70	99	70	99	70	70	60	60	70	60	60
Emissions Factor Equations																	
Transfer Operations (EPA AP-42 Chapter 13.2.4, dated 11/06) [a]																	
Uncontrolled EF (UEF) Equation	UEF (lb/ton) = [k x (0.0032) x (U / 5)$^{1.3}$]/(M / 2)$^{1.4}$] where k = 0.74 (<30µm); k = 0.35 (<10µm); k = 0.53 (<2.5µm) U = mean wind speed (mph); M = material moisture content (%)	(lb/ton)															
Controlled EF (CEF) Equation	CEF (lb/ton) = UEF (lb/ton) x [100% - Removal Efficiency (%)]																
Unpaved Roads (EPA AP-42 Chapter 13.2.2, dated 11/06) [a]																	
Uncontrolled EF (UEF) Equation	UEF (lb/mile) = k x (s/12)^{a} x (w/3)^{b} where a = 0.7 and b = 0.45, k = 4.9 for PM where a = 0.9 and b = 0.45, k = 1.5 for PM_{10} where a = 0.9 and b = 0.45, k = 0.15 for $PM_{2.5}$ s = surface material silt content (%) w = mean vehicle weight = 25 tons on average	(lb/mile)															
Controlled EF (CEF) Equation	CEF (lb/mile) = k x (s/12)a x (w/3)b x [(365-P)/365] x [100% - Removal efficency (%)] Accounting for rainfall using [(365-P)/365] Where P = number of precipation days >0.1 inch																
Paved Roads (EPA AP-42 Chapter 13.2.1, dated 1/11) [a]																	
Uncontrolled EF (UEF) Equation	UEF (lb/mile) = [k x (sl)^{a} x (w)^{b}] where a = 0.91 and b = 1.02 where k = 0.011 for PM; k = 0.0022 for PM10; k = 0.00054 for PM2.5 sl = road surface silt loading (%) = 1, based on engineering judgment w = average weight of truck traveling the road	(lb/mile)															
Controlled EF (CEF) Equation	CEF (lb/mile) = [k x (sl)a x (w)b] x (1-*P*/(4N)) x [100% - Removal Efficiency (%)] N = number of days in the averaging period (365 for annual) Accounting for rainfall using (1-P/(4 x 365)) Where P = number of precipation days >0.01 inch, therefore control = (1-61/(4 x 365)) = 0.958																
Wind Erosion (EPA AP-42 Chapter 13.2.5, dated 11/06, for k factors) [b]																	
Uncontrolled EF (UEF) Equation	UEF (lb/day/acre) = k x 1.7 x (s/1.5) x ((365 - p)/235) x (f/15) where k = 1.0 (<30µm); k = 0.5 (<10µm); k = 0.075 (<2.5µm)	(lb/day/acre)															
Controlled (Final) EF (CEF) Equation	CEF (lb/day/acre) = UEF (lb/day/acre) x (100% Removal Efficiency (%))																
Calculated PM Emissions Factor (EF)																	
Uncontrolled EF	Short Term		0.293	0.847	0.00017	0.00017	0.00017	0.02500	0.00017	0.00540	0.00017	0.00017	4.1	0.00017	0.00017	0.00017	4.1
	Annual		0.293	0.847	0.00007	0.00007	0.00007	0.02500	0.00007	0.00540	0.00007	0.00007	0.8	0.00007	0.00007	0.00007	0.8
Controlled EF	Short Term		0.112	0.233	0.00005	0.00005	0.00005	2.20E-03	0.00005	0.00120	0.00005	0.00005	1.6	0.00007	0.00005	0.00007	1.6
	Annual		0.112	0.233	0.00002	0.00002	0.00002	2.20E-03	0.00002	0.00120	0.00002	0.00002	0.3	0.00003	0.00002	0.00003	0.3
Calculated PM_{10} Emissions Factor (EF)																	
Uncontrolled EF, lb/ton	Short Term		0.059	0.259	0.00008	0.00008	0.00008	0.00870	0.00008	0.00240	0.00008	0.00008	2.1	0.00008	0.00008	0.00008	2.1
	Annual		0.059	0.259	0.00003	0.00003	0.00003	0.00870	0.00003	0.00240	0.00003	0.00003	0.4	0.00003	0.00003	0.00003	0.4
Controlled EF, lb/ton	Short Term		0.022	0.071	0.00002	0.00002	0.00002	0.00074	0.00002	0.00054	0.00002	0.00002	0.8	0.00003	0.00002	0.00003	0.8
	Annual		0.022	0.071	0.00001	0.00001	0.00001	0.00074	0.00001	0.00054	0.00001	0.00001	0.2	0.00001	0.00001	0.00001	0.2
Calculated $PM_{2.5}$ Emissions Factor (EF)																	
Uncontrolled EF, lb/ton	Short Term		0.0144	0.026	0.00001	0.00001	0.00001	0.00870	0.00001	0.00240	0.00001	0.00001	0.31	0.00001	0.00001	0.00001	0.31
	Annual		0.0144	0.026	0.00001	0.00001	0.00001	0.00870	0.00001	0.00240	0.00001	0.00001	0.06	0.00001	0.00001	0.00001	0.06
Controlled EF, lb/ton	Short Term		0.0055	0.007	0.000004	0.000004	0.000004	0.00074	0.000004	0.000100	0.000004	0.000004	0.12	0.000005	0.000004	0.000005	0.12
	Annual		0.0055	0.007	0.000001	0.000001	0.000001	0.00074	0.000001	0.000100	0.000001	0.000001	0.02	0.000002	0.000001	0.000002	0.02
Estimated Emission Rate (CER)																	
PM	lb/hr (daily basis)		1.10	0.39	0.00869	0.00869	0.00869	0.01540	0.00869	0.03780	0.00869	0.00869	0.223	0.01159	0.00869	0.01159	0.223
	TPY		2.40	1.71	0.00774	0.00774	0.00774	0.06745	0.00774	0.16556	0.00774	0.00774	0.195	0.01032	0.00774	0.01032	0.195
PM_{10}	lb/hr (daily basis)		0.22	0.12	0.00411	0.00411	0.00411	0.00518	0.00411	0.01680	0.00411	0.00411	0.112	0.00548	0.00411	0.00548	0.112
	TPY		0.48	0.52	0.00366	0.00366	0.00366	0.02269	0.00366	0.07358	0.00366	0.00366	0.098	0.00488	0.00366	0.00488	0.098
$PM_{2.5}$	lb/hr (daily basis)		0.05	0.01	0.00062	0.00062	0.00062	0.00518	0.00062	0.01680	0.00062	0.00062	0.017	0.00083	0.00062	0.00083	0.017
	TPY		0.12	0.05	0.00041	0.00041	0.00041	0.02269	0.00041	0.07358	0.00041	0.00041	0.015	0.00073	0.00041	0.00073	0.015

[a] USEPA, 2006; AP-42, Section 13.2.4 for Aggregate Handling and Storage Piles. Section 13.2.1.3 for Paved Roads. Section 13.2.2 for Unpaved Roads. USEPA, 1993; Emission Factor Documentation for AP-42, Section 13.2.1 Paved Roads.

[b] USEPA 1992 (Fugitive Dust Background and Technical Information Document for Best Available Control Measures, Section 2.3.1.3.3, Wind Emissions from Continuously Active Piles). USEPA, 2006 13.2.5 for k factors.

Table 3: EU001 Material Handling Operations Emission Estimates (Reclaim)

	Parameters	Units Flow Diagram ID	Reclaimer Belt to belt E transfer point Re1	Truck loading to two reclaim hoppers Re2	Reclaim Hoppers to Conveyor E transfer point Re3	Building E, Conveyor belt E-F transfer point Re4 *	Conveyor Belt F-G transfer point Re5	Conveyor Belt G-H transfer point Re6	Building H, Conveyor H-I transfer point Re7	Truck Delivery of Lime on Paved Roads to Silo
Operational Data										
Activity, hours	Daily	(hrs/day)	24	24	24	24	24	24	24	12
days	Annual	(days/yr)	365	365	365	365	365	365	365	260
Material Handling Data										
Material Type			Wood chips	Wood chips	Wood chips	Wood chips	Wood chips	Wood chips	Wood chips	Lime
Material throughput, ton/hr (design rate)			84	84	84	84	84	84	84	0.4
ton/day	Daily	(tons/day)	2,018	2,018	2,018	2,018	2,018	2,018	2,018	N/A
ton/yr	Annual	(tons/yr)	736,547	736,547	736,547	736,547	736,547	736,547	736,547	N/A
Moisture content (M), %		%	35	35	35	35	35	35	35	N/A
Number of transfers		No.	1	1	1	1	1	1	1	N/A
Miles per day of road transport	Daily Avg = Annual Avg	No.	NA	NA	NA	NA	NA	NA	NA	0.3
Miles per truck round trip	Daily Avg = Annual Avg	No.	NA	NA	NA	NA	NA	NA	NA	
Number of truck trips	Daily Avg = Annual Avg	No.	NA	NA	NA	NA	NA	NA	NA	
General / Site Characteristics										
Mean wind speed, mph	Daily	mph	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5
	Annual	mph	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
Particle size multiplier, PM (k)			0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.011
Particle size multiplier, PM_{10} (k)			0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.0022
Particle size multiplier, $PM_{2.5}$ (k)			0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.00054
Days of Precipitation greater than or equal to 0.01 inch (p)	Short term Annual									
Time (%) that unobstructed wind speed exceeds 5.4 m/s at mean pile height (f)	Short Term Annual									
Silt content (s), %			NA	NA	NA	NA	NA	NA	NA	100
Emission Control Data										
Emission Control Method			Enclosed	low drop point	Enclosed	Enclosed	Enclosed	Enclosed	Enclosed	Water Sprays
Emission Control Removal Efficiency, %		%	95	70	95	95	95	95	95	60
Emissions Factor Equations										
Transfer Operations (EPA AP-42 Chapter 13.2.4, dated 11/06)[a]										
Uncontrolled EF (UEF) Equation	UEF (lb/ton) = [k x (0.0032) x (U / 5)$^{1.3}$]/(M / 2)$^{1.4}$] where k = 0.74 (<30µm); k = 0.35 (<10µm); k = 0.53 (<2.5µm) U = mean wind speed (mph); M = material moisture content (%)	(lb/ton)								
Controlled EF (CEF) Equation	CEF (lb/ton) = UEF (lb/ton) x [100% - Removal Efficiency (%)]									
Paved Roads (EPA AP-42 Chapter 13.2.1, dated 1/11)[a]										
Uncontrolled EF (UEF) Equation	UEF (lb/mile) = [k x (sl)^a x (w)^b] where a = 0.91 and b = 1.02 where k = 0.011 for PM; k = 0.0022 for PM10; k = 0.00054 for PM2.5 sl = road surface silt loading (%) = 1 based on Golder 2001 Port Transportation Study w = average weight of truck traveling the road	(lb/mile)								
Controlled EF (CEF) Equation	CEF (lb/mile) = [k x (sl)a x (w)b] x (1-P/(4N)) x [100% - Removal Efficiency (%)] N = number of days in the averaging period (365 for annual) Accounting for rainfall using (1-P/(4 x 365)) Where P = number of precipation days >0.01 inch, therefore control = (1-61/(4 x 365)) = 0.958									
Calculated PM Emissions Factor (EF)										
Uncontrolled EF	Short Term		1.72E-04	1.72E-04	1.72E-04	1.72E-04	3.44E-04	1.72E-04	1.72E-04	2.93E-01
	Annual		7.04E-05	7.04E-05	7.04E-05	7.04E-05	1.41E-04	7.04E-05	7.04E-05	2.93E-01
Controlled EF	Short Term		8.59E-06	5.16E-05	8.59E-06	8.59E-06	1.72E-05	8.59E-06	8.59E-06	1.17E-01
	Annual		3.52E-06	2.11E-05	3.52E-06	3.52E-06	7.04E-06	3.52E-06	3.52E-06	1.17E-01
Calculated PM_{10} Emissions Factor (EF)										
Uncontrolled EF, lb/ton	Short Term		8.13E-05	8.13E-05	8.13E-05	8.13E-05	1.63E-04	8.13E-05	8.13E-05	5.87E-02
	Annual		3.33E-05	3.33E-05	3.33E-05	3.33E-05	6.66E-05	3.33E-05	3.33E-05	5.87E-02
Controlled EF, lb/ton	Short Term		4.06E-06	2.44E-05	4.06E-06	4.06E-06	8.13E-06	4.06E-06	4.06E-06	2.35E-02
	Annual		1.67E-06	9.99E-06	1.67E-06	1.67E-06	3.33E-06	1.67E-06	1.67E-06	2.35E-02
Calculated $PM_{2.5}$ Emissions Factor (EF)										
Uncontrolled EF, lb/ton	Short Term		1.23E-05	1.23E-05	1.23E-05	1.23E-05	2.46E-05	1.23E-05	1.23E-05	1.44E-02
	Annual		5.04E-06	5.04E-06	5.04E-06	5.04E-06	1.01E-05	5.04E-06	5.04E-06	1.44E-02
Controlled EF, lb/ton	Short Term		6.16E-07	3.69E-06	6.16E-07	6.16E-07	1.23E-06	6.16E-07	6.16E-07	5.76E-03
	Annual		2.52E-07	1.51E-06	2.52E-07	2.52E-07	5.04E-07	2.52E-07	2.52E-07	5.76E-03
Estimated Emission Rate (CER)										
PM	lb/hr (daily basis)		0.0007	0.00433	0.00072	0.00072	0.0014	0.0007	0.0007	0.0020
	TPY		0.0013	0.00778	0.00130	0.00130	0.0026	0.0013	0.0013	0.0086
PM_{10}	lb/hr (daily basis)		0.0003	0.00205	0.00034	0.00034	0.0007	0.0003	0.0003	0.0004
	TPY		0.0006	0.00368	0.00061	0.00061	0.0012	0.0006	0.0006	0.0017
$PM_{2.5}$	lb/hr (daily basis)		0.0001	0.00031	0.00005	0.00005	0.0001	0.0001	0.0001	0.0001
	TPY		0.0001	0.00056	0.00009	0.00009	0.0002	0.0001	0.0001	0.0004

[a] USEPA, 2006; AP-42, Section 13.2.4 for Aggregate Handling and Storage Piles. Section 13.2.1.3 for Paved Roads. Section 13.2.2 for Unpaved Roads. USEPA, 1993; Emission Factor Documentation for AP-42, Section 13.2.1 Paved Roads.

* Emissions from Re4 include Conveyor E-F transfer point and disc screening with a screen-to-conveyor E transfer point. Disc screen of wood particles negligible emissions and vented to transfer point. In summary, includes two transfer points.

Table 4: Material Handling Project Data

Operation Scenario	Data	Units
Stackout Operations[a]		
Hours of Operation:	12	hours per day (hrs/day)
	365	days per year (days/yr)
	4,380	hours per year (hrs/yr)
Wood throughput rates:	168	Hopper 1 thru 4 (tons per hr - tons/hr)*
* based on 2 x the max fuel firing in boiler or 6.7 truck/hr. Unloading at higher rate is possible, 30 minutes per truck= 8 truck/hr (200 ton/hr). use engineering judgment 168 truck/hr is maximum.		
	2,018	tons per day (tons/day)
	736,547	tons per year (TPY)
Fuel Truck Delivery		
Truck Traffic (delivering fuel):	13	tons per truck unloaded
	38	tons per truck loaded
	25	average weight (ton) of truck
	81	Number of trucks per day
	29,462	Number of trucks per year
	7,626	feet round trip per truck
	1.4	miles round trip per truck
Reclaim Operations		
Hours of Operation:	24	hrs/day
	365	days/yr
	8,76	hrs/yr
Wood throughput rates:	900	Heat Input (MMBtu/hr)
	35	% Moisture
	5,352	Btu/lb
	168,161	pounds per hr (lb/hr)
	84	tons/hr
	2,018	tons/day
	736,547	TPY
Lime Truck Delivery		
Lime Delivery:	1	truck per week
	25	ton of lime per truck
	5	ton of lime per day
	0.2	trucks per day
	7,817	ft round trip (entrance to lime silo) per truck
	1.4	miles round trip (entrance to lime silo) per truck
	0.3	miles per day
Wood Pile Management Estimation		
Area of pile:	141,556	square foot (ft^2)
Pile diameter:	425	feet (ft)
Front end loader trip length[b]:	1,333	ft traveled per front end loader
	0.3	miles traveled per front end loader
Daily average:	40	miles per day round trip
Annual average:	14,654	miles per year
Material throughput:	84	tons/hr (design)
	2,018	tons/day
	736,547	TPY
Front end loader capacity[c]:	430,858	lbs operating weight
	47	cuyards (yd^3)
	1,269	cubic feet (ft^3)
	13	tons per scoop
Front end loader trips:	7	trips per hour
	159	trips per day

Notes:

[a]Based on a 7 day per week operational schedule

[b]Assumed that front end loaders will move 1/2 of the perimeter of the circular storage pile (perimeter = pi x 2 x r)

[c]Front end loader's capacity based on CAT 994F Wheeled Loader.

Table 5: EU003 Ash and Handling, Storage and Shipment

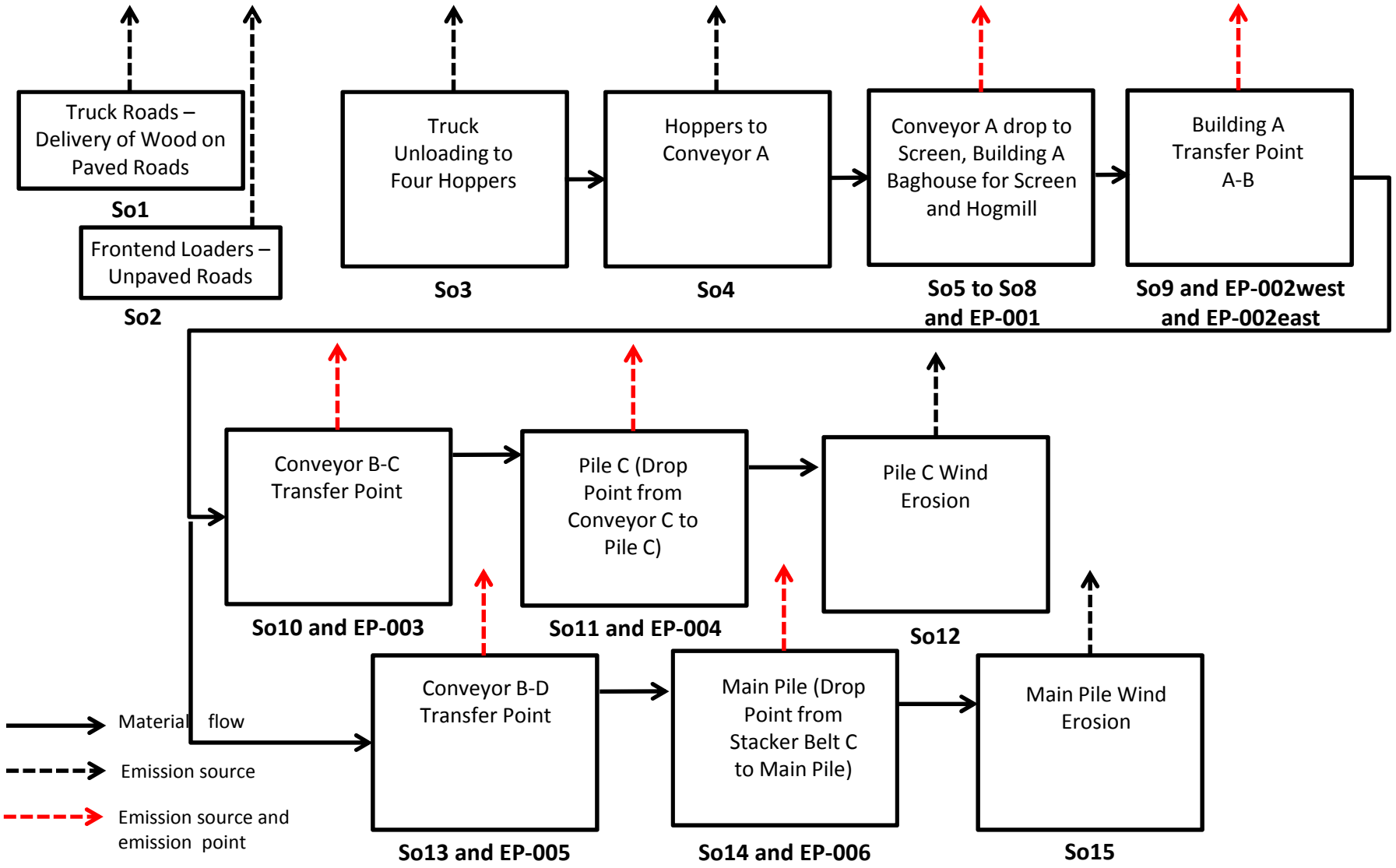
Parameters	Units	EP-036
Operational Data		
Air Flow	acfm	11000
Stack Height	ft	200
Diameter	ft	1.5
Temperature	deg F	180
Controlled Emissions	grain/scf	0.02
PM/PM10/PM2.5 Factor*		
PM		0.0099
PM10		0.0016
PM2.5		0.0006
PM Emission rate based on 0530021-021-AV		
hours of allowed operation	hr/yr	7884
PM	lb/hr (daily basis)	1.89
	TPY	7.43
PM_{10}	lb/hr (daily basis)	0.3
PM10 = 0.0016/0.0099 PM	TPY	1.2
$PM_{2.5}$	lb/hr (daily basis)	0.1
PM2.5 = 0.0006/0.0099 PM	TPY	0.5

*control for PM10 and PM2.5 relative to PM based on AP-42, Table 11.19.2-4. EF for pulverized mineral operations. (SCC 3-05-038-13)

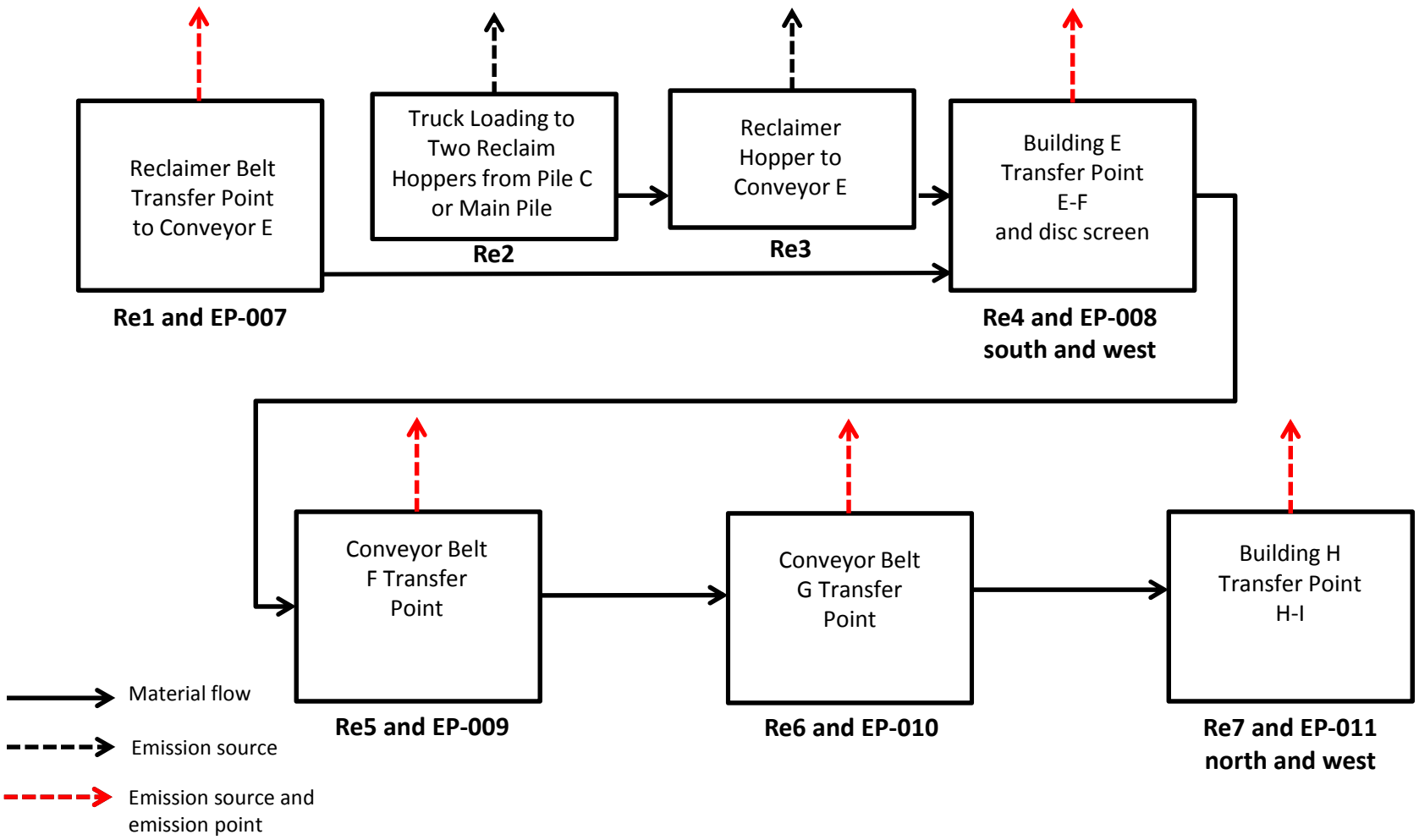
PM =0.0099, PM10 =0.0016, PM2.5=0.0006

Attachment 3: Electronic copy - spreadsheet of Calculations

Attachment 4: Flow charts of EU001



Florida Power Development, LLC **Revision of Title V permit 03530380-002-AV and related application** **March 13, 2015**	TITLE: **EU001 - MATERIALS HANDLING FLOW CHART (Stack – Out) portion**	KOOGLER & ASSOCIATES



Florida Power Development, LLC **Revision of Title V permit 03530380-002-AV and related application** **March 13, 2015**	TITLE: **EU001 - MATERIALS HANDLING FLOW CHART (Reclaim) portion**	KOOGLER & ASSOCIATES

Attachment 5: Updated Title V air permit application form

Application Responsible Official Certification

Complete if applying for an initial, revised, or renewal Title V air operation permit or concurrent processing of an air construction permit and revised or renewal Title V air operation permit. If there are multiple responsible officials, the "application responsible official" need not be the "primary responsible official."

1. Application Responsible Official Name: **William O'Brien**

2. Application Responsible Official Qualification (Check one or more of the following options, as applicable):

- [x] For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C.
- [ ] For a partnership or sole proprietorship, a general partner or the proprietor, respectively.
- [ ] For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official.
- [ ] The designated representative at an Acid Rain source or CAIR source.

3. Application Responsible Official Mailing Address...
Organization/Firm: **Florida Power Development, LLC**
Street Address: **10311 Cement Plant Road**
City: **Brooksville** State: **FL** Zip Code: **34601**

4. Application Responsible Official Telephone Numbers...
Telephone: **(352) 799-7881** ext. Fax: ()

5. Application Responsible Official E-mail Address: **Bill.Obrien@ihiphower.com**

6. Application Responsible Official Certification:

I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. 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 and all other applicable requirements identified in this application to which the Title V source is subject. 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 the facility or any permitted emissions unit. Finally, I certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in compliance plan(s) submitted with this application.

William F. O'Brien — Signature

3-17-15 — Date

Corrected pages submitted March 2015
for Title V Air Permit Application submitted March 28, 2014

Professional Engineer Certification (415 ILCS 5/39.2)

1. Professional Engineer Name: **Max Lee, Ph.D., P.E.**
   Registration Number: **58091**
2. Professional Engineer Mailing Address...
   Organization/Firm: **Koogler and Associates, Inc.**
   Street Address: **4014 NW 13th Street**
   City: **Gainesville** State: **Florida** Zip Code: **32609**
3. Professional Engineer Telephone Numbers...
   Telephone: (**352**) **377** - **5822** ext.19 Fax: (**352**) **377** - **7158**
4. Professional Engineer E-mail Address: **mlee@kooglerassociates.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 X, 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 3/13/15
Date

(seal)

MAXWELL R. LEE LICENSE No. 58091 STATE OF FLORIDA PROFESSIONAL ENGINEER

* Attach any exception to certification statement.

EMISSIONS UNIT INFORMATION
Section [1] of [5]

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for an initial, revised or renewal Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for an air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application – Where this application is used to apply for both an air construction permit and a revised or renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes, and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this application that is subject to air construction permitting and for each such emissions unit that is a regulated or unregulated unit for purposes of Title V permitting. (An emissions unit may be exempt from air construction permitting but still be classified as an unregulated unit for Title V purposes.) Emissions units classified as insignificant for Title V purposes are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

EMISSIONS UNIT INFORMATION
Section [1] of [5]

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

☐ 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.

Emissions Unit Description and Status

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

☐ 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. Description of Emissions Unit Addressed in this Section:
Biomass Handling, Storage and Processing

3. Emissions Unit Identification Number: **001**

4. Emissions Unit Status Code: **A**	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code: **49**

8. Federal Program Applicability: (Check all that apply)

☐ Acid Rain Unit

☐ CAIR Unit

9. Package Unit:
Manufacturer: Model Number:

10. Generator Nameplate Rating:

11. Emissions Unit Comment: **This EU consists of the biomass receiving and conveyance system, screen/hogmill for material resizing, the biomass storage pile, the biomass boiler feed system and truck traffic due to lime delivery. This includes biomass loading for removal from the site if the biomass deteriorates or otherwise becomes unusable.**

EMISSIONS UNIT INFORMATION
Section [1] of [5]

Emissions Unit Control Equipment/Method: Control **1** of **1**

1. Control Equipment/Method Description: **One baghouse for the building enclosing the following equipment: (1) sizing screen, (2) magnetic separator and (3) hog mill. Fabric Filter Low Temp (T<180F) – 018 The baghouse is designed to an outlet dust loading rate of 0.02 grains per dry standard cubic foot.**
2. Control Device or Method Code: **018 for low temperature baghouse. No other control devices**

EMISSIONS UNIT INFORMATION
Section [1] of [5]

B. EMISSIONS UNIT CAPACITY INFORMATION
(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate:
2. Maximum Production Rate:
3. Maximum Heat Input Rate: million Btu/hr
4. Maximum Incineration Rate: pounds/hr tons/day
5. Requested Maximum Operating Schedule: hours/day days/week weeks/year **8,760** hours/year
6. Operating Capacity/Schedule Comment: **The hours of operations of this unit are not limited. There are design specifications of this EU's equipment.** **-Truck unloading area with four hoppers, each designed to receive 150 TPH.** **-Unloading conveyor system designed for a capacity of 450 TPH.** **-Design of the covered conveyor of 450 TPH.** **-Two reclaim hoppers, each designed to process 100 TPH.** **-Biomass feed system conveyor system to have a design capacity of 200 TPH.** **-Sizing screen, magnetic separator and hog mill, each with a design rate of 200 TPH. This equipment is enclosed in a single building and emissions are controlled with a baghouse.** **-Conveying system from screen/separator/hog mill to the grate-suspension boiler of 200 TPH.** **-Boiler day bins designed to provide biomass to grate-suspension boiler rate of 200 TPH.** **The open storage pile limited to 40,000 tons.**

EMISSIONS UNIT INFORMATION
Section [1] of [5]

C. EMISSION POINT (STACK/VENT) INFORMATION

(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: **See March 2015 resubmittal Attachment 1**	2. Emission Point Type Code: **0 and 3**	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: **See attached March 2015 Attachment 1 for diagram of emission points, layout, and aerial locations.**		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:		
5. Discharge Type Code: V	6. Stack Height: **50**	7. Exit Diameter: Feet **0.6**
8. Exit Temperature: **77** °F	9. Actual Volumetric Flow Rate: Acfm **1020**	10. Water Vapor: **2 %**
11. Maximum Dry Standard Flow Rate: Dscfm	12. Nonstack Emission Point Height: Feet NA	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):	14. Emission Point Latitude/Longitude… Latitude (DD/MM/SS) **28/35/07** Longitude (DD/MM/SS) **82/25/41**	
15. Emission Point Comment: **Baghouse information located in Building A are provided above. All other points are fugitive.**		

EMISSIONS UNIT INFORMATION
Section [1] of [5]

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment **1** of **2**

1. Segment Description (Process/Fuel Type): **Industrial Processes → Miscellaneous Manufacturing Industries → Miscellaneous Industrial Processes → Grinding/Screening**		
2. Source Classification Code (SCC): **3-99-999-99**	3. SCC Units: **Tons**	
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:		

Segment Description and Rate: Segment **2** of **2**

1. Segment Description (Process/Fuel Type): **Industrial Processes → Miscellaneous Manufacturing Industries → Miscellaneous Industrial Processes → Material Conveyance**		
2. Source Classification Code (SCC): **3-99-999-99**	3. SCC Units: **Tons**	
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:		

EMISSIONS UNIT INFORMATION
Section [1] of [5]

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM	**018**		**WP**
PM10	**018**		**WP**

EMISSIONS UNIT INFORMATION **POLLUTANT DETAIL INFORMATION**
Section [1] of [5] **Page [1] of [2]**

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **PM**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **2.08** lb/hour **4.83** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: **5**
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **See Table 1 in attached March 2015 Appendix for more specific breakdown of estimated emissions.**	
11. Potential, Fugitive, and Actual Emissions Comment:	

EMISSIONS UNIT INFORMATION **POLLUTANT DETAIL INFORMATION**
Section [1] of [5] **Page [1] of [2]**

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions __ of ___

1. Basis for Allowable Emissions Code: **N/A**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

EMISSIONS UNIT INFORMATION **POLLUTANT DETAIL INFORMATION**
Section [1] of [5] **Page [2] of [2]**

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **PM10**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **0.63** lb/hour **1.34** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: 5
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years

10. Calculation of Emissions:

See Table 1 in attached March 2015 Appendix for more specific breakdown of estimated emissions.

11. Potential, Fugitive, and Actual Emissions Comment:

EMISSIONS UNIT INFORMATION **POLLUTANT DETAIL INFORMATION**
Section [1] of [5] **Page [2] of [2]**

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions __ of ___

1. Basis for Allowable Emissions Code: **N/A**	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

EMISSIONS UNIT INFORMATION
Section [1] of [5]

G. VISIBLE EMISSIONS INFORMATION

Complete Subsection G if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation **1** of **2**

1. Visible Emissions Subtype: **VE10**	2. Basis for Allowable Opacity: [X] Rule [ ] Other
3. Allowable Opacity: Normal Conditions: **10** % Exceptional Conditions: **20** % Maximum Period of Excess Opacity Allowed: **6** min/hour	
4. Method of Compliance: **Method 9**	
5. Visible Emissions Comment: **As determined by EPA Method 9, visible emissions shall not exceed 10% opacity, except for one 6 minute period no greater than 20% from the outlets of the drop points, transfer points, vent screens and dust collectors associated with this emission unit.**	

Visible Emissions Limitation: Visible Emissions Limitation **2** of **2**

1. Visible Emissions Subtype: **VE05**	2. Basis for Allowable Opacity: [ ] Rule [X] Other
3. Allowable Opacity: Normal Conditions: **5** % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: **Method 9**	
5. Visible Emissions Comment: **Baghouse (A-Conveyor) Visible Emissions. As determined by EPA Method 9, visible emissions from the baghouse shall not exceed 5% opacity.**	

EMISSIONS UNIT INFORMATION
Section [1] of [5]

H. CONTINUOUS MONITOR INFORMATION

Complete Subsection H if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor **N/A** of **N/A**

1. Parameter Code:	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:	

EMISSIONS UNIT INFORMATION
Section [1] of [5]

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [X] Attached, Document ID: **Appendix** [ ] Previously Submitted, Date _____

2. Fuel Analysis or Specification: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [ ] Attached, Document ID: **n/a** [ ] Previously Submitted, Date _____

3. Detailed Description of Control Equipment: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [X] Attached, Document ID: **Appendix** [ ] Previously Submitted, Date _____

4. Procedures for Startup and Shutdown: (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [ ] Attached, Document ID: _____ [ ] Previously Submitted, Date _____
   [X] Not Applicable (construction application)

5. Operation and Maintenance Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [ ] Attached, Document ID: _____ [ ] Previously Submitted, Date _____
   [X] Not Applicable

6. Compliance Demonstration Reports/Records:
   [ ] Attached, Document ID: _____
   Test Date(s)/Pollutant(s) Tested: _____
   [X] Previously Submitted, Date: **April 25, 2014**
   Test Date(s)/Pollutant(s) Tested: _____
   [ ] To be Submitted, Date (if known): _____
   Test Date(s)/Pollutant(s) Tested: _____
   [ ] Not Applicable

   Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.

7. Other Information Required by Rule or Statute:
   [ ] Attached, Document ID: _____ [ ] Not Applicable

EMISSIONS UNIT INFORMATION
Section [1] of [5]

I. EMISSIONS UNIT ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(10) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)): ☐ Attached, Document ID: _____ ☒ Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rules 62-212.400(4)(d) and 62-212.500(4)(f), F.A.C.): ☐ Attached, Document ID: _____ ☒ Not Applicable
3. Description of Stack Sampling Facilities: (Required for proposed new stack sampling facilities only) ☐ Attached, Document ID: _____ ☒ Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements: ☐ Attached, Document ID: _____
2. Compliance Assurance Monitoring: ☐ Attached, Document ID: _____ ☒ Not Applicable
3. Alternative Methods of Operation: ☐ Attached, Document ID: _____ ☒ Not Applicable
4. Alternative Modes of Operation (Emissions Trading): ☐ Attached, Document ID: _____ ☒ Not Applicable

Additional Requirements Comment

EMISSIONS UNIT INFORMATION
Section [3] of [5]

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for an initial, revised or renewal Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for an air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application – Where this application is used to apply for both an air construction permit and a revised or renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes, and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit addressed in this application that is subject to air construction permitting and for each such emissions unit that is a regulated or unregulated unit for purposes of Title V permitting. (An emissions unit may be exempt from air construction permitting but still be classified as an unregulated unit for Title V purposes.) Emissions units classified as insignificant for Title V purposes are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

EMISSIONS UNIT INFORMATION
Section [3] of [5]

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

☐ 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.

Emissions Unit Description and Status

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

☐ 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. Description of Emissions Unit Addressed in this Section:
Ash and Handling, Storage and Shipment

3. Emissions Unit Identification Number: **003**

4. Emissions Unit Status Code: **A**	5. Commence Construction Date: **1986**	6. Initial Startup Date: **1986**	7. Emissions Unit Major Group SIC Code: **49**

8. Federal Program Applicability: (Check all that apply)

☐ Acid Rain Unit
☐ CAIR Unit

9. Package Unit:
Manufacturer: Model Number:

10. Generator Nameplate Rating: MW

11. Emissions Unit Comment:

EMISSIONS UNIT INFORMATION
Section [3] of [5]

Emissions Unit Control Equipment/Method: Control **1** of **1**

1. Control Equipment/Method Description: **Fabric Filter – High Temperature (T>250F) – 016** **This emission point under EU003 is old emission unit EU036**
2. Control Device or Method Code: **016**

EMISSIONS UNIT INFORMATION
Section [3] of [5]

B. EMISSIONS UNIT CAPACITY INFORMATION
(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate:
2. Maximum Production Rate:
3. Maximum Heat Input Rate: million Btu/hr
4. Maximum Incineration Rate: pounds/hr tons/day
5. Requested Maximum Operating Schedule: hours/day days/week weeks/year **8,760** hours/year
6. Operating Capacity/Schedule Comment: **This unit does not have any performance restrictions.**

EMISSIONS UNIT INFORMATION
Section [3] of [5]

C. EMISSION POINT (STACK/VENT) INFORMATION
(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram:	2. Emission Point Type Code: **1**	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: **Previously identified as EU036. See attached March 2015 Appendix.**		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:		
5. Discharge Type Code: **V**	6. Stack Height: **200** Feet	7. Exit Diameter: **1.5** Feet
8. Exit Temperature: **180** °F	9. Actual Volumetric Flow Rate: **11,000** Acfm	10. Water Vapor: %
11. Maximum Dry Standard Flow Rate: Dscfm	12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: East (km): **360.041** North (km): **3162.612**	14. Emission Point Latitude/Longitude… Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment: **This unit consists of the prior EU 036 under the Title V permit facility ID 0530021. The air construction permit application for the biomass conversion project and the subsequent Title V permit inadvertently included prior (old EU001) as an emission point and part of this Emission Unit 003. This emission point (old EU001) is part of the CEMEX facility, not part of FPD, and should therefore be removed from the FPD Title V permit for the Booksville Power Plant.**		

EMISSIONS UNIT INFORMATION
Section [3] of [5]

D. SEGMENT (PROCESS/FUEL) INFORMATION

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

1. Segment Description (Process/Fuel Type): **Industrial Processes → Miscellaneous Manufacturing Industries → Miscellaneous Industrial Processes → Fly Ash Storage/Handling**		
2. Source Classification Code (SCC): **3-99-999-99**	3. SCC Units: **Tons**	
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:		

EMISSIONS UNIT INFORMATION
Section [3] of [5]

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
PM	**016**		**WP**
PM10	**016**		**WP**

EMISSIONS UNIT INFORMATION **POLLUTANT DETAIL INFORMATION**
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F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **PM**	2. Total Percent Efficiency of Control: **99 %**
3. Potential Emissions: **1.9** lb/hour **7.4** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:3B
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **See attached Appendix for calculations.**	
11. Potential, Fugitive, and Actual Emissions Comment:	

EMISSIONS UNIT INFORMATION **POLLUTANT DETAIL INFORMATION**
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F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions **NA** of **NA**

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

EMISSIONS UNIT INFORMATION **POLLUTANT DETAIL INFORMATION**
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F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted:**PM10**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **0.3** lb/hour **1.2** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:3B
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **See attached March 2015 Appendix for calculations.**	
11. Potential, Fugitive, and Actual Emissions Comment:	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions **NA** of **NA**

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

EMISSIONS UNIT INFORMATION **POLLUTANT DETAIL INFORMATION**
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F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Complete a Subsection F1 for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V operation permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

1. Pollutant Emitted: **$PM_{2.5}$**	2. Total Percent Efficiency of Control:
3. Potential Emissions: **0.1** lb/hour **0.5** tons/year	4. Synthetically Limited? ☐ Yes ☒ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: 5
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions: **See attached March 2015 Appendix for calculation of emissions**	
11. Potential, Fugitive, and Actual Emissions Comment:	

EMISSIONS UNIT INFORMATION **POLLUTANT DETAIL INFORMATION**
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F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete Subsection F2 if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions **1** of **1**

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

EMISSIONS UNIT INFORMATION
Section [3] of [5]

G. VISIBLE EMISSIONS INFORMATION

Complete Subsection G if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation **1** of **2**

1. Visible Emissions Subtype: **VE10**	2. Basis for Allowable Opacity: ☐ Rule ☒ Other
3. Allowable Opacity: Normal Conditions: **10** % Exceptional Conditions: **20** % Maximum Period of Excess Opacity Allowed: **6** min/hour	
4. Method of Compliance: **Method 9**	
5. Visible Emissions Comment: **These visible emission limitations are for the bottom and fly ash conveyors, transfer points, drop points, hoppers, chutes and dust collectors.**	

Visible Emissions Limitation: Visible Emissions Limitation **2** of **2**

1. Visible Emissions Subtype: **VE05**	2. Basis for Allowable Opacity: ☐ Rule ☒ Other
3. Allowable Opacity: Normal Conditions: **5** % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: **Method 9**	
5. Visible Emissions Comment: **These visible emission limitations are for the ash storage bin vent filter.**	

EMISSIONS UNIT INFORMATION
Section [3] of [5]

H. CONTINUOUS MONITOR INFORMATION

Complete Subsection H if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor **N/A** of **N/A**

1. Parameter Code:	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:	

EMISSIONS UNIT INFORMATION
Section [3] of [5]

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [X] Attached, Document ID: **Appendix** [ ] Previously Submitted, Date _____

2. Fuel Analysis or Specification: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [ ] Attached, Document ID: **n/a** [ ] Previously Submitted, Date _____

3. Detailed Description of Control Equipment: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [X] Attached, Document ID: **Appendix** [ ] Previously Submitted, Date _____

4. Procedures for Startup and Shutdown: (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [ ] Attached, Document ID: ____ [ ] Previously Submitted, Date _____
   [X] Not Applicable (construction application)

5. Operation and Maintenance Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [ ] Attached, Document ID: ____ [ ] Previously Submitted, Date _____
   [X] Not Applicable

6. Compliance Demonstration Reports/Records:
   [ ] Attached, Document ID: _____
   Test Date(s)/Pollutant(s) Tested: _____
   [X] Previously Submitted, Date: **April 25, 2014**
   Test Date(s)/Pollutant(s) Tested: **Visible emissions**
   [X] To be Submitted, Date (if known):
   Test Date(s)/Pollutant(s) Tested: _____
   [ ] Not Applicable

   Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.

7. Other Information Required by Rule or Statute:
   [ ] Attached, Document ID: _____ [ ] Not Applicable

EMISSIONS UNIT INFORMATION
Section [3] of [5]

I. EMISSIONS UNIT ADDITIONAL INFORMATION (CONTINUED)

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(10) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e)): ☐ Attached, Document ID: _____ ☒ Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rules 62-212.400(4)(d) and 62-212.500(4)(f), F.A.C.): ☐ Attached, Document ID: _____ ☒ Not Applicable
3. Description of Stack Sampling Facilities: (Required for proposed new stack sampling facilities only) ☐ Attached, Document ID: _____ ☒ Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements: ☐ Attached, Document ID: **Provided March 2014**
2. Compliance Assurance Monitoring: ☐ Attached, Document ID: _____ ☒ Not Applicable
3. Alternative Methods of Operation: ☐ Attached, Document ID: _____ ☒ Not Applicable
4. Alternative Modes of Operation (Emissions Trading): ☐ Attached, Document ID: _____ ☒ Not Applicable

Additional Requirements Comment
