TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION

APPLICANT

Buckeye Florida Limited Partnership
Foley Mill
One Buckeye Drive
Perry, Florida 32056

Facility ID No. 1230001

PROJECT

Project No. 1230001-037-AC
Request to construct the transformer process

COUNTY

Taylor, Florida

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Air Resource Section
Northeast District Office
7825 Baymeadows Way, Suite B-200
Jacksonville, Florida 32256-7590

September 16, 2011

I. APPLICATION INFORMATION

A. APPLICANT NAME AND ADDRESS

Buckeye Florida Limited Partnership
Foley Mill
One Buckeye Drive
Perry, Florida 32056

Authorized Representative:
Mr. Howard Drew, Plant Manager

B. APPLICATION PROCESSING SCHEDULE

September 6, 2011	Received the application for an air pollution construction permit.
September 16, 2011	Application deemed complete.

C. FACILITY LOCATION

The Buckeye Florida, Limited Partnership Foley Mill is located at One Buckeye Drive, Perry, Florida as shown in Figure 1.

Figure 1: Buckeye Florida Limited Partnership Foley Mill

D. FACILITY DESCRIPTION

Buckeye Florida, Limited Partnership Foley Mill operates an existing dissolving grade Kraft process pulp mill. In the Kraft process, the digesting liquor (white liquor) is a solution of sodium hydroxide and sodium sulfide that is mixed with wood chips and cooked under pressure. The spent liquor, known as weak black liquor, is concentrated and sodium sulfate is added to make up for chemical losses. The black liquor solids (BLS) are burned in the recovery furnaces to produce a smelt of sodium carbonate and sodium sulfide. The smelt is dissolved in water to form green liquor to which quicklime (calcium oxide) is added to convert the sodium carbonate back to sodium hydroxide, which reconstitutes the cooking liquor. The spent lime cake (calcium carbonate) is recalcined in a rotary lime kiln to produce quicklime, which is used to convert the green liquor to cooking liquor. Steam and energy needs at the plant are met by: combination boilers, which burn bark/wood, tall oil, supplemental residual oil; power boilers, which burn residual oil, tall oil, natural gas; and recovery boilers, which burn BLS, tall oil, and supplemental ultra low sulfur diesel and residual oil.

E. FACILITY CLASSIFICATION CODE (SIC)

Industry Group No.	26	Paper And Allied Products
Industry No.	2611	Pulp Mills

F. FACILITY REGULATORY CATEGORIES

- The facility is a major source of hazardous air pollutants (HAP).
- The facility has no units subject to the acid rain provisions of the Clean Air Act.
- The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility is a major stationary source in accordance with Rule 62-212.400(PSD), F.A.C.
- This facility is a major source of air pollutants, other than HAPs.
- This facility has one or more emissions units subject to NSPS (40CFR 60).
- This facility has one or more emissions units subject to NESHAP (40 CFR 61 or Part 63)

G. Project Description

In the initial construction permit application received on September 6, 2011, the Foley Mill requested authorization to construct the transformer process. In this process, a portion of the bleached pulp leaving the No. 2 Purification Plant is chemically treated, dried and baled. This process is a scaled-up version of the existing sidestream process, and will be implemented parallel to the current sidestream process as shown in Figure 2.

Figure 2: Facility Process Flow Diagram

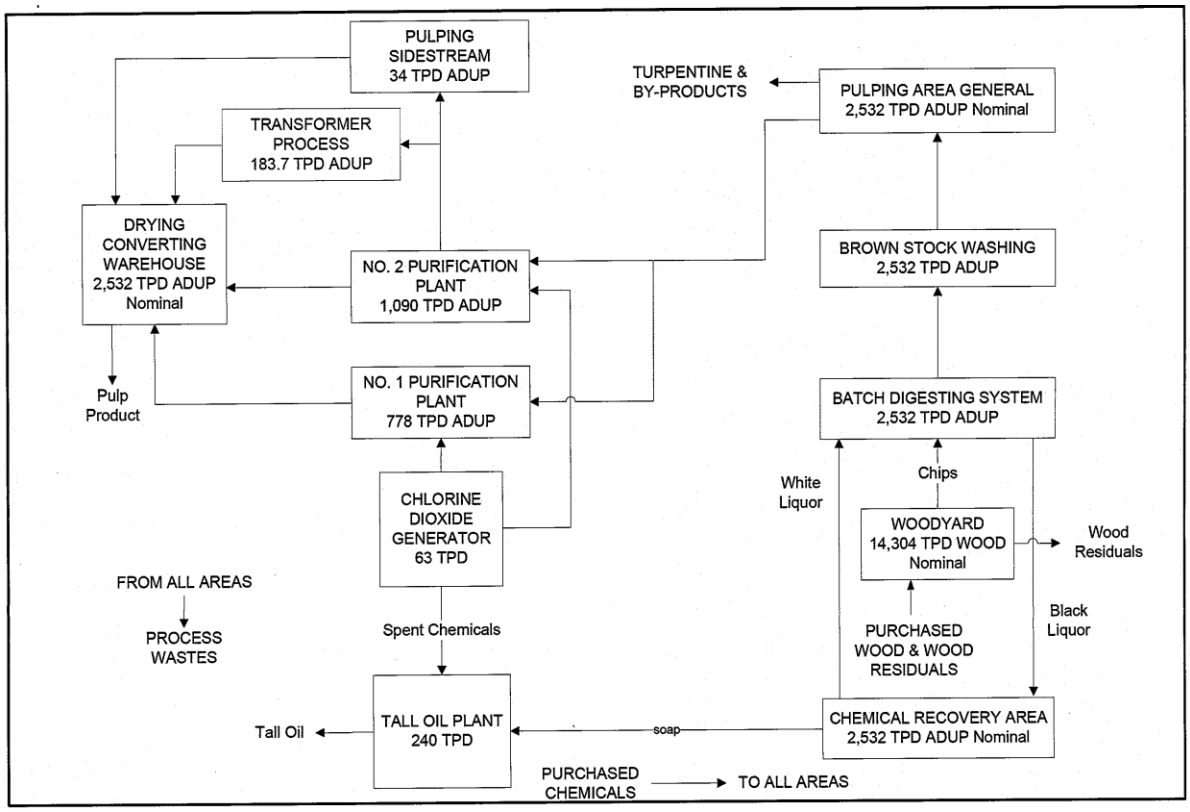
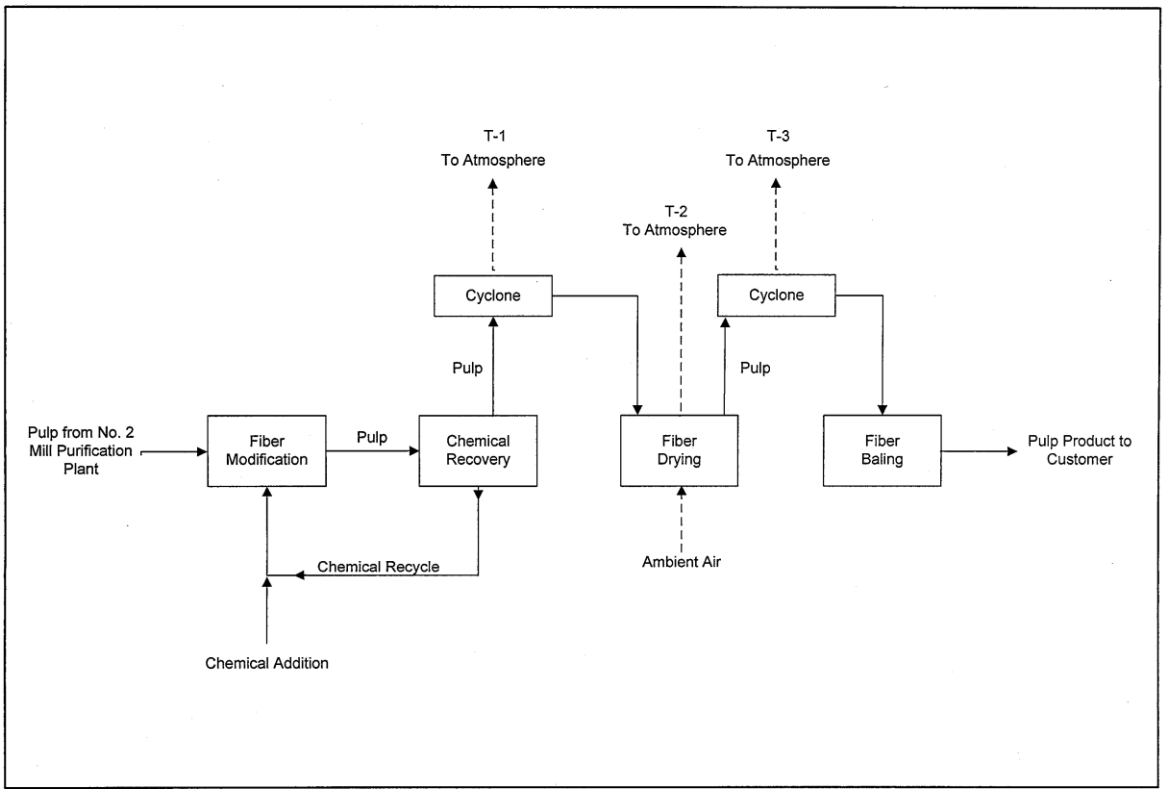


Figure 3 shows the process flow diagram for the transformer process. Bleached pulp from the No. 2 Purification Plant will be diverted to the new process upstream of the No. 2 Mill Paper Machine. The pulp will then undergo a chemical fiber modification using a proprietary chemical which does not contain any volatile organic compounds (VOCs) or hazardous air pollutants (HAPs). This is then followed by a chemical recovery process to separate the proprietary chemical from the fibers for reuse in the process. The enhanced clean fibers will then be bulk-dried in a tunnel dryer using ambient air. The dried fibers will then be baled in a conventional baler, then wrapped and bound for shipment to customers.

Figure 3: Transformer Process Flow Diagram



This process includes three air emission points (EPs). Pneumatic systems are used to transport the fibers from the chemical recovery process to the tunnel dryer and from the tunnel dryer to the baler. In each of these transitions, a cyclone will be used to control potential PM emissions before being exhausted to the atmosphere (EPs 01 and 03). The tunnel dryer will also have an atmospheric exhaust (EP 02).

The submitted application states that the No. 2 Paper Machine and the steam boilers may potentially be affected by the proposed transformer process. However, in a subsequent email from the application contact (received September 14, 2011), it was stated that there will be no increase in emissions from these units. While the transformer process will require approximately 53,000 lb/hr of 150-psi steam, this steam will ultimately be obtained from excess steam generated by the boilers, which is currently being diverted to the No. 6 Turbine Generator. Therefore, no additional steam will be produced by the boilers. Since the transformer process diverts pulp away from the No. 2 Paper Machine inlet stream, the throughput of the No. 2 Paper Machine will decrease. (It is not necessary to take this reduction in throughput into account for the purposes of

avoiding PSD review.) As a result, the overall production rate of the facility as a whole will not change, as the throughput of the No. 2 Purification Plant will not change.

H. Applicant's Expected Air Emissions

According to the initial construction permit application, the transformer process is a scaled-up version of the existing sidestream process, with analogous equipment, emissions and emission points. As such, the mill expects the emission factors for PM, PM_{10} and $PM_{2.5}$ for the transformer process to be the same as those for the existing sidestream process. Thus, emission factors were measured using the existing emission points in the sidestream process. (Table 1)

Table 1: PM Emission Factor Measurements from the Sidestream Process

	Emission Rate (lb/ton)		
Run	S-1, Shredder Cyclone	S-2, Tunnel Dryer	S-3, Tunnel Dryer Cyclone
1	0.036	0.118	0.059
2	0.065	0.058	0.095
3	0.040	0.082	0.051
Average	**0.047**	**0.086**	**0.068**
1	0.116	0.050	0.363
2	0.199	0.058	0.408
3	0.116	0.067	0.443
Average	**0.144**	**0.058**	**0.405**
1	0.062		0.098
2	0.097		0.098
3	0.027		0.122
Average	**0.062**		**0.106**

From these measurements, the most conservative average emission factor for each emission point is used in calculating projected emissions for the transformer process. Projected emissions for the transformer project are given in Table 2.

Table 2: PM, PM10 and PM2.5 Projected Emissions for the Transformer Project

Transformer Project	PM Emission Factor[b] (lb/ton)	Transformer Process @ 165.34 TPD (13,778 lb/hr) ADBP[a]		
		Potential PM Emissions[c] (lb/hr)	Potential PM_{10} Emissions[d] (lb/hr)	Potential $PM_{2.5}$ Emissions[e] (lb/hr)
T-1: Wet Pulp Feed to Dryer Cyclone	0.144	0.99	0.54	0.30
T-2: Tunnel Dryer	0.086	0.59	0.33	0.18
T-3: Dry Pulp Feed to Baler Cyclone	0.405	2.79	1.53	0.84
Total (lb/hr)	--	4.37	2.40	1.31
Total (TPY)[f]	--	19.15	10.53	5.75
20% Safety Factor				
Total (lb/hr)	--	5.25	2.89	1.57
Total (TPY)[f]	--	**22.98**	**12.64**	**6.89**
Significant Emission Rate (TPY)		**25**	**15**	**10**

[a] The maximum production rate is based on 150 tonnes/day. 150 tonnes/day x 1.1023 tons/tonnes = 165.34 tons/day
[b] Based on most conservative emission factors from Table 1
[C] Example calculation:
0.144 lb/ton PM x 165.34 TPD ADBP x 1 day/24 hr = 0.99 lb/hr PM
[d] Assumed to be 55% of PM emissions based on similar processes from AP-42
[e] Assumed to be 30% of PM emissions based on similar processes from AP-42
[f] Annual emissions based on 8760 hr/yr operation

II. APPLICATION REVIEW

A. NSPS REVIEW

The U. S. Environmental Protection Agency (EPA) establishes air quality regulations in Title 40 of the Code of Federal Regulations (CFR). Part 60 specifies New Source Performance Standards (NSPS) for numerous industrial categories. The Department adopts these federal regulations on a quarterly basis in Rule 62-204.800, F.A.C. The transformer process is not subject to any NSPS regulations.

B. NESHAP REVIEW

The U. S. Environmental Protection Agency (EPA) establishes air quality regulations in Title 40 of the Code of Federal Regulations (CFR). Part 61 specifies National Emission Standards for Hazardous Air Pollutants (NESHAP) based on specific pollutants. Part 63 specifies NESHAP based on the Maximum Achievable Control Technology (MACT) for numerous industrial categories. The Department adopts these federal regulations on a quarterly basis in Rule 62-204.800, F.A.C. The transformer process is not subject to any NESHAP regulations.

C. PSD Applicability for Project

The Department regulates major stationary sources in accordance with Florida's PSD program, as defined in Rule 62-210.200, F.A.C. and approved by EPA in the State Implementation Plan (SIP). A PSD review is only required in areas that are currently in attainment with the NAAQS for a given pollutant or areas designated as "unclassifiable" for the pollutant. A facility is considered "major" with respect to PSD if the facility emits or has the potential to emit:

- 250 tons per year or more of any regulated air pollutant, or
- 100 tons per year or more of any regulated air pollutant and the facility belongs to one of the 28 Major Facility Categories as defined in Section 62-210.200, F.A.C., or
- 5 tons per year of lead.

For new projects at existing PSD-major sources, each regulated pollutant is reviewed for PSD applicability based on emissions thresholds known as the Significant Emission Rates listed in 62-210.200 (Definitions, Significant Emission Rate), F.A.C. Projects that result in a significant net emissions increase are considered "major modifications." For each significant pollutant, the applicant must not only employ Best Available Control Technology (BACT) to minimize emissions but also conduct an appropriate ambient impact analyses. Although a facility may be "major" with respect to PSD for only one regulated pollutant, it may be required to install BACT controls for several significant regulated pollutants.

This facility is a "major source" with respect to the PSD regulations. The Significant Emission Rates for PM, PM10 and PM2.5 are 25, 15 and 10 TPY, respectively. Based on the results shown in Table 2, none of the projected emissions for the transformer project surpass the applicable Significant Emission Rates. Therefore, the transformer project is not considered to be a "major modification."

III. PRELIMINARY DETERMINATION

Based on the projected emission calculations provided by the applicant, the Department believes that the transformer process can be operated within the operational and emission limitations of the existing air permits, and that a PSD review will not be triggered.

Additional details of this analysis may be obtained by contacting Brent Steele by phone at (904) 256-1565, by email at brent.c.steele@dep.state.fl.us , or by mail at the Department's Northeast District Office, 7825 Baymeadows Way, Suite B-200, Jacksonville, FL 32256-7590.