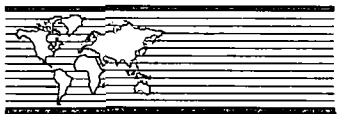

Permit Application

BUCKEYE ENERGY INDEPENDENCE PROJECT APPLICATION TO EXTEND PERMIT NO. 1230001-023-AC

Buckeye Florida, Limited Partnership
Foley Mill

Prepared For: Buckeye Florida, Limited Partnership
One Buckeye Drive
Perry, FL 32348

Submitted By: Golder Associates Inc.
6026 NW 1st Place
Gainesville, FL 32607 USA

Distribution: 4 copies – FDEP
2 copies – Buckeye
1 copy – Golder Associates Inc.

November 2012

113-87653

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APPLICATION FOR AIR PERMIT

LONG FORM

Department of Environmental Protection

Division of Air Resource Management

APPLICATION FOR AIR PERMIT - LONG FORM

I. APPLICATION INFORMATION

Air Construction Permit – Use this form to apply for an air construction permit:

- For any required purpose at a facility operating under a federally enforceable state air operation permit (FESOP) or Title V air operation permit;
- For a proposed project subject to prevention of significant deterioration (PSD) review, nonattainment new source review, or maximum achievable control technology (MACT);
- To assume a restriction on the potential emissions of one or more pollutants to escape a requirement such as PSD review, nonattainment new source review, MACT, or Title V; or
- To establish, revise, or renew a plantwide applicability limit (PAL).

Air Operation Permit – Use this form to apply for:

- An initial federally enforceable state air operation permit (FESOP); or
- An initial, revised, or renewal Title V air operation permit.

To ensure accuracy, please see form instructions.

Identification of Facility

1. Facility Owner/Company Name: **Buckeye Florida, Limited Partnership**	
2. Site Name: **Foley Mill**	
3. Facility Identification Number: **1230001**	
4. Facility Location... Street Address or Other Locator: **One Buckeye Drive** City: **Perry** County: **Taylor** Zip Code: **32348**	
5. Relocatable Facility? ☐ Yes ☒ No	6. Existing Title V Permitted Facility? ☒ Yes ☐ No

Application Contact

1. Application Contact Name: **David Weeden, Environmental Program Manager**
2. Application Contact Mailing Address... Organization/Firm: **Buckeye Florida, Limited Partnership** Street Address: **One Buckeye Drive** City: **Perry** State: **FL** Zip Code: **32348**
3. Application Contact Telephone Numbers... Telephone: **(850) 548-1398** ext. Fax: **(850) 584-1220**
4. Application Contact E-mail Address: **dave_weeden@bkitech.com**

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	3. PSD Number (if applicable):
2. Project Number(s):	4. Siting Number (if applicable):

APPLICATION INFORMATION

Purpose of Application

This application for air permit is being submitted to obtain: (Check one)

Air Construction Permit

☒ Air construction permit.

☐ Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL).

☐ Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL), and separate air construction permit to authorize construction or modification of one or more emissions units covered by the PAL.

Air Operation Permit

☐ Initial Title V air operation permit.

☐ Title V air operation permit revision.

☐ Title V air operation permit renewal.

☐ Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is required.

☐ Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is not required.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit (Concurrent Processing)

☐ Air construction permit and Title V permit revision, incorporating the proposed project.

☐ Air construction permit and Title V permit renewal, incorporating the proposed project.

Note: By checking one of the above two boxes, you, the applicant, are requesting concurrent processing pursuant to Rule 62-213.405, F.A.C. In such case, you must also check the following box:

☐ I hereby request that the department waive the processing time requirements of the air construction permit to accommodate the processing time frames of the Title V air operation permit.

Application Comment

The purpose of this application is to request an extension of Permit Nos. 1230001-023-AC/ PSD-FL-397 and 1230001-036-AC/PSD-FL-397A, which were for the Foley Energy Independence Project. An extension of the permit until October 1, 2014 is requested to allow completion of work on the No. 3 Recovery Boiler. See Attachment A for further information.

APPLICATION INFORMATION

Scope of Application

Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Processing Fee
007	No. 3 Recovery Boiler		N/A

Application Processing Fee

Check one: ☐ Attached - Amount: $_____ ☒ Not Applicable

APPLICATION INFORMATION

Owner/Authorized Representative Statement

Complete if applying for an air construction permit or an initial FESOP.

1. Owner/Authorized Representative Name :
   Howard Drew, Vice President
2. Owner/Authorized Representative Mailing Address...
   Organization/Firm: **Buckeye Florida, Limited Partnership**
   Street Address: **One Buckeye Drive**
   City: **Perry** State: **FL** Zip Code: **32348**
3. Owner/Authorized Representative Telephone Numbers...
   Telephone: **(850) 584-1656** ext. Fax: **(850) 584-1722**
4. Owner/Authorized Representative E-mail Address: **howard_drew@bkitech.com**
5. Owner/Authorized Representative Statement:

   I, the undersigned, am the owner or authorized representative of the corporation, partnership, or other legal entity submitting this air permit application. To the best of my knowledge, the statements made in this application are true, accurate and complete, and any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department.

   Signature

   11/26/12
   Date

APPLICATION INFORMATION

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:

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

   ☐ 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, CAIR source, or Hg Budget source.

3. Application Responsible Official Mailing Address...
   Organization/Firm:
   Street Address:
   City: State: Zip Code:

4. Application Responsible Official Telephone Numbers...
   Telephone: ( ) ext. Fax: ( )

5. Application Responsible Official E-mail Address:

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.

Signature Date

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: **David A. Buff**
   Registration Number: **19011**
2. Professional Engineer Mailing Address...
   Organization/Firm: **Golder Associates Inc.****
   Street Address: **6026 NW 1st Place**
   City: **Gainesville** State: **FL** Zip Code: **32607**
3. Professional Engineer Telephone Numbers...
   Telephone: **(352) 336-5600** ext. **21145** Fax: **(352) 336-6603**
4. Professional Engineer E-mail Address: **dbuff@golder.com**
5. Professional Engineer Statement:

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

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

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

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

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

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

David A. Buff — 11/27/12

Signature Date

(seal)

* Attach any exception to certification statement.

** Board of Professional Engineers Certificate of Authorization #00001670.

ATTACHMENT A

ATTACHMENT A

This application requests an extension of Permit Nos. 1230001-023-AC/PSD-FL-397 and 1230001-036-AC/PSD-FL-397A for Buckeye's Energy Independence Project (EIP). This permit was originally issued in August 2008 for a multi-phased project that reduced the amount of electricity purchased from the grid and reduced the amount of fossil fuel used at Buckeye's Foley Plant. Permit No. 1230001-036/PSD-FL-397A approved an extension request for this project. This permit has a current expiration date of November 1, 2012.

Phase I of the project included the conversion of the No. 2 Recovery Boiler from direct-contact evaporator units to low-odor non-direct contact units. This phase of the project was completed and started up in July 2010.

Phase II of the project included two parts:

1. The addition of a new condensing steam turbine-electrical generator. This part of the project was completed and started up in January 2011.
2. The conversion of the No. 3 Recovery Boiler from direct-contact evaporator units to low-odor, non-direct contact units. This part of the project was completed in March 2012.

Subsequent to the conversion of the No. 3 Recovery Boiler, the boiler was compliance tested, continuous emission monitoring systems (CEMS) for nitrogen oxides (NO_x) and carbon monoxide (CO) were installed, and the boiler was able to meet all emission limits. However, the boiler has experienced an extreme rate of fouling of the upper furnace heat transfer surfaces. An increased rate of fouling was expected, but not at the levels currently being experienced. Due to this excessive fouling, the No. 3 Recovery Boiler has been required to shut down for cleaning approximately every 3 weeks, as compared to pre-conversion operation when the boiler required 6 months between shut downs.

There are multiple causes for the high fouling rate. First, higher combustion air flows are necessary to process the increased heat input rate to the boiler, since the black liquor oxidation process is no longer lowering the heating value of the black liquor. In addition, the oxygen that was previously chemically bound in the black liquor during the oxidation process is no longer available and must now be provided to the boiler by the forced-draft (FD) fans. Second, the new CO permit limit has led to another small incremental air demand to provide slightly higher excess oxygen levels than pre-conversion to ensure compliance with the new requirement. These air demand changes have led to an air demand increase of approximately 10 percent over pre-conversion levels. It is noted that the existing combustion air system is able to supply the increased air to the boiler. As stated in Buckeye's application for the project, "The existing combustion air fans on the No. 3 Recovery Boiler are adequately sized to accommodate the

increased heating value of the black liquor fuel, therefore no modifications are required for the fans." Therefore this was an expected change due to the conversion.

Another change occurring as a result of the conversion was a significant increase in the droplet size of the black liquor, which has occurred for a number of reasons.

The combination of the higher air demand and the greater black liquor droplet size leads to a higher rate of liquor droplets being entrained and combusted higher in the furnace than pre-conversion. As a result, much higher temperatures are occurring in the upper furnace, and the boiler is plugging in 3 weeks rather than the historical 5 to 6 months. The higher flue gas temperatures in the upper furnace also give serious risk of higher corrosion rates of the screen tubes and superheaters. Boiler tube leaks and safety impacts are expected to occur if the process problems are not addressed.

It is noted that while these problems have occurred, Buckeye has been able to maintain compliance with new emission limits for the boiler imposed by the air construction permit. However, in order to reduce the fouling problems described above, the operational rate of the boiler has been lowered. Buckeye would like to implement changes to allow the boiler to achieve the previously planned (permitted) black liquor solids firing rate, which did not change from the pre-conversion permitted rate.

Buckeye proposes to implement additional physical changes to the No. 3 Recovery Boiler to allow the permitted black liquor solids rate to be achieved with acceptable fouling/plugging rates, while maintaining compliance with all emission limits. To determine the physical changes which must be made, a computer modeling study of the No.3 Recovery Boiler furnace has been initiated by the boiler manufacturer who performed the conversion in order to determine the modifications to the furnace that will provide the best improvements to lower the air velocity through the furnace, while still providing sufficient oxygen for combustion. There is a reasonably high probability that the boiler configuration found by the modeling study will include the following components:

- Additional primary air ports near the furnace comers may be added, or air port sizes could change, etc.
- A true secondary air zone, just a few feet above the primary air zone, would likely be required. The configuration might be a two-wall interlaced arrangement with air ports on just two walls.
- The existing secondary air zone (one level above the liquor guns) would require modification and become the tertiary air zone. These changes would likely eliminate the existing air ports, in favor of a two-wall interlaced arrangement with air ports on just two walls.
- Since the new air system layout would introduce air more effectively in each combustion zone, and provide better mixing of oxygen and black liquor, the total air demand for the

new system may be expected to be slightly lower at a given rate as compared to the existing system. It would also likely produce improved CO control capability.

It is noted that in application for the EIP, Buckeye did not propose adding a tertiary air system to the No. 3 Recovery Boiler. In FDEP's Technical Evaluation and Preliminary Determination for the project, included in the draft permit package, FDEP states that "The Department accepts the applicant's proposal to minimize CO emission by boiler design and combustion control with a tertiary OFA system to complete combustion." However, as stated, Buckeye did not propose a tertiary overfire air (OFA) system. The final permit issued by FDEP for the EIP listed the "authorized modifications" to the No.3 Recovery Boiler. This list did not include an OFA system, therefore Buckeye was not authorized at the time to implement a tertiary OFA system. Therefore, Buckeye is now applying for this authorization.

Buckeye anticipates that this additional work on No. 3 Recovery Boiler will be accomplished in two phases. Some portion of the scope will be installed in the spring of 2013, and the remainder of the scope will be installed in the spring of 2014. Buckeye requests that Permit No. PSD-FL-397 and PSD-FL-397A be extended to allow for this additional project work to be completed, along with sufficient time to optimize the boiler operation and demonstrate compliance. It is anticipated this will be accomplished by October 1, 2014. Therefore Buckeye requests an extension of the air construction permit until October 1, 2014.

At Golder Associates we strive to be the most respected global group of companies specializing in ground engineering and environmental services. Employee owned since our formation in 1960, we have created a unique culture with pride in ownership, resulting in long-term organizational stability. Golder professionals take the time to build an understanding of client needs and of the specific environments in which they operate. We continue to expand our technical capabilities and have experienced steady growth with employees now operating from offices located throughout Africa, Asia, Australasia, Europe, North America and South America.

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