DRAFT PERMIT

PERMITTEE

Tarmac America, LLC
455 Fairway Drive, Suite 200
Deerfield Beach, FL 33441

Authorized Representative:
Al Townsend, Director of Alternative Fuels

Air Permit No. 0250020-031-AC
Permit Expires: November 1, 2014
Minor Air Construction Permit

Pennsuco Cement Plant
Alternative Solid Fuels

PROJECT

This is the final air construction permit, which authorizes: the construction of mechanical and pneumatic solid fuel handling and feed systems for the precalciner and main kiln burner; installation of a new multi-fuel main kiln burner system; and the firing of a variety of alternative solid fuels including combinations of plastics, tire-derived fuel, reject roofing shingles, clean cellulosic biomass, manufactured cellulosic biomass, agricultural fibrous organic byproducts, pre-consumer reject paper, carpet-derived fuel and engineered fuels. The proposed work will be conducted at the existing Pennsuco Cement plant, which is categorized under Standard Industrial Classification Code No. 3241. The existing Pennsuco Cement Plant is located in Miami-Dade County at 11000 NW 121 Way in Medley, Florida. The UTM coordinates Zone 17, 562.3 km East and 2861.7 km North.

This final permit is organized into the following sections: Section 1 (General Information); Section 2 (Administrative Requirements); Section 3 (Emissions Unit Specific Conditions); Section 4 (Appendices). Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of Section 4 of this permit.

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of: Chapter 403 of the Florida Statutes (F.S.) and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to conduct the proposed work in accordance with the conditions of this permit. This project is subject to the general preconstruction review requirements in Rule 62-212.300, F.A.C. and is not subject to the preconstruction review requirements for major stationary sources in Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

Upon issuance of this final permit, any party to this order has the right to seek judicial review of it under Section 120.68 of the Florida Statutes by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel (Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000) and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within 30 days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida
For the Division of Air Resource Management
(DRAFT)

_____ _____
(Name) (Date)

_____
(Print Name of Designated Representative)

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Final Air Permit package (including the Final Determination and Final Permit with Appendices) was sent by electronic mail, or a link to these documents made available electronically on a publicly accessible server, with received receipt requested before the close of business on _____(DRAFT)_____ to the persons listed below.

Mr. Al Townsend, Tarmac America, LLC (atownsend@titanamerica.com)
Mr. Max Lee, Ph.D., P.E., Koogler and Associates, Inc. (mlee@kooglerassociates.com)
Mr. Kyle Ulmer, Koogler and Associates, Inc. (kulmer@kooglerassociates.com)
Mr. Matt Tribby, Koogler and Associates, Inc. (mtribby@kooglerassociates.com)
Mr. Lennon Anderson, DEP SED (lennon.anderson@dep.state.fl.us)
Ms. Mallika Muthiah, DERM (muthim@miamidade.gov)
Ms. Kathleen Forney, EPA Region 4 (forney.kathleen@epa.gov)
Ms. Heather Abrams, EPA Region 4 (abrams.heather@epa.gov)
Ms. Ana M. Oquendo, EPA Region 4 (oquendo.ana@epa.gov)
Mr. David Langston, EPA Region 4 (langston.david@epa.gov)
Ms. Lynn Scearce, DEP OPC Reading File (lynn.scearce@dep.state.fl.us)

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.

(DRAFT)

_____ _____
(Clerk) (Date)

FACILITY DESCRIPTION

This project will affect the following existing permitted emissions unit.

Facility ID No. 0250020	
ID No.	**Emission Unit Description**
028	Pyro-processing/Raw Mill System with new equipment: Replacement main kiln burner Mechanical Feed System for Alternative Solid Fuels Pneumatic Feed System for Alternative Solid Fuels
037	Grinding and Screening Operations for Alternative Solid Fuels (Re-processing)

A baghouse controls particulate matter (PM) emissions from the preheater/precalciner kiln exhaust as well as exhausts from the clinker cooler, raw mill and coal mill. Emissions of carbon monoxide (CO), nitrogen oxides (NOx) and volatile organic compounds (VOC) are controlled by the efficient combustion design (long residence times at high temperatures) of the FLSmidth preheater/precalciner kiln and good operating practices. Potential dioxin and furan emissions are controlled by the high-temperature combustion followed by rapid cooling. Acid gases such as sulfur dioxide (SO_2) and hydrochloric acid (HCl) are controlled by limestone scrubbing as part of the raw material feed and clinker production. To demonstrate compliance with the emission limits specified in the permit, continuous emission monitoring systems (CEMS) in the main kiln/raw mill stack measure and record emissions of CO, NOx, SO_2, total hydrocarbons or "THC" (which serves as a surrogate for VOC emissions). A continuous opacity monitoring system (COMS) measure and record the opacity of the flue gas exhaust in the main kiln/raw mill stack. The baghouse inlet temperature is continuously monitored and recorded to ensure that it is maintained below that of the most recent compliance stack test, which provides assurance of effective control of dioxins and furans.

FACILITY REGULATORY CLASSIFICATION

- The facility is a major source of hazardous air pollutants (HAP).
- 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.

PROJECT DESCRIPTION

This permit authorizes: the construction of mechanical and pneumatic solid fuel handling and feed systems for the precalciner and main kiln burner; installation of a new multi-fuel main kiln burner system; and the firing of a variety of alternative solid fuels including combinations of plastics, tire-derived fuel, reject roofing shingles, clean cellulosic biomass, manufactured cellulosic biomass, agricultural fibrous organic byproducts, pre-consumer reject paper, carpet-derived fuel and engineered fuels.

1. Permitting Authority: The permitting authority for this project is the Office of Permitting and Compliance, Division of Air Resource Management, Florida Department of Environmental Protection (Department). The mailing address is 2600 Blair Stone Road (MS #5505), Tallahassee, Florida 32399-2400. All documents related to applications for permits to operate an emissions unit shall be submitted to the Air Resource Section of the Miami-Dade County Department of Environmental Resource Management at 701 NW 1st Court, Suite 400, Miami, Florida 33136.
2. Compliance Authority: All documents related to compliance activities such as reports, tests and notifications shall be submitted to the Air Resource Section of the Miami-Dade County Department of Environmental Resource Management at 701 NW 1st Court, Suite 400, Miami, Florida 33136.
3. Appendices: The following Appendices are attached as a part of this permit: Appendix A (Citation Formats and Glossary of Common Terms); Appendix B (General Conditions); Appendix C (Common Conditions); and Appendix D (Common Testing Requirements).
4. Applicable Regulations, Forms and Application Procedures: Unless otherwise specified in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296 and 62-297, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.
5. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]
6. Modifications: The permittee shall notify the Compliance Authority upon commencement of construction. No new emissions unit shall be constructed and no existing emissions unit shall be modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. A permittee may request that a permit be extended as a modification of the permit. Such a request must be submitted in writing before the expiration of the permit. Upon timely submittal of a request for extension, the permit will remain in effect until final agency action is taken on the request. For construction permits, an extension shall be granted if the applicant can demonstrate reasonable assurances that, upon completion, the extended permit will comply with the standards and conditions required by applicable regulation. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]
7. Source Obligation:

   (a) At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

   (b) At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by exceeding its projected actual emissions, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

   [Rule 62-212.400(12), F.A.C.]

8. Application for Title V Permit: This permit authorizes construction of mechanical and pneumatic fuel handling and feed systems for the precalciner and main kiln burner; installation of a new multi-fuel main kiln burner system; use of alternative fuels; and initial operation to determine compliance with Department rules. A Title V air operation permit is required for regular operation of the permitted emissions unit. Based on the preliminary schedule, the project will likely be completed in three sequential stages: the bucket elevator precalciner feed system followed by the pneumatic injection precalciner feed system followed by replacement of the main kiln burner system. Except as otherwise specified in this condition, the permittee shall apply for a Title V air operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after commencing operation of the first installed feed system and completion of the first initial ASF assessment. If less than 180 days will elapse between the initial ASF assessments on the first feed system and installation of the second feed system, the permittee shall apply for a revised Title V air operation permit no later than 180 days after completing installation of the second feed system. The Title V permit will incorporate the requirements authorizing ASF use and future subsequent assessments with the installed equipment. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results and such additional information as the Department may by law require. The application shall be submitted to the appropriate Permitting Authority with copies to the Compliance Authority. [Rules 62-4.030, 62-4.050, 62-4.220 and Chapter 62-213.420, F.A.C.]

9. Actual Emissions Reporting: This permit is based on an analysis that compared baseline actual emissions with projected actual emissions and avoided the requirements of subsection 62-212.400(4) through (12), F.A.C. for several pollutants. Therefore, pursuant to Rule 62-212.300(1)(e), F.A.C., the permittee is subject to the following monitoring, reporting and recordkeeping provisions.

   a. The permittee shall monitor the emissions of any PSD pollutant that the Department identifies could increase as a result of the construction or modification and that is emitted by any emissions unit that could be affected; and, using the most reliable information available, calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of 5 years following resumption of regular operations after the change. Emissions shall be computed in accordance with the provisions in Rule 62-210.370, F.A.C., which are provided in Appendix C of this permit.

   b. The permittee shall report to the Department within 60 days after the end of each calendar year during the 5-year period setting out the unit's annual emissions during the calendar year that preceded submission of the report. The report shall contain the following:

      1) The name, address and telephone number of the owner or operator of the major stationary source;

      2) The annual emissions calculations pursuant to the provisions of 62-210.370, F.A.C., which are provided in Appendix C of this permit;

      3) If the emissions differ from the preconstruction projection, an explanation as to why there is a difference; and

      4) Any other information that the owner or operator wishes to include in the report.

   c. The information required to be documented and maintained pursuant to subparagraphs 62-212.300(1)(e)1 and 2, F.A.C., shall be submitted to the Department, which shall make it available for review to the general public.

   For this project, the permit requires the annual reporting of actual emissions for the following pollutants: carbon monoxide (CO), nitrogen oxides (NOx), particulate matter (PM), sulfur dioxide (SO_2), volatile organic compounds (VOC), mercury (Hg) and lead (Pb).

   The affected emissions units are: pyro-processing/raw mill system (EU-028), the mechanical feed system, the pneumatic feed system, associated grinding and screening operations (EU-037), fugitives and combustion byproducts from related engines) and fugitive dust (EU-031) associated with additional truck traffic as well as the unloading, loading and handling of the alternative solid fuels.

Once construction is finished on a fuel feed system or the main kiln burner, the first report is due within 60 days of completing the first full year of operation with the equipment in place. Note that if installation of the equipment is staggered to multiple years then, correspondingly, more than five reports may be required.

As specified in Condition 20 of this permit, the CO, NOx and THC emissions data collected during the authorized shakedown/ASF assessment periods may be excluded from the comparison of actual to baseline emissions. Excluded data shall be replaced with data estimated from: the actual clinker production rate; and an emissions factor based on the average emission rates from the rest of the year (i.e., all periods except the shakedown and/or assessment periods). The permittee shall report all of the original information as actual emissions, but may deduct emissions data collected during the equipment shakedown and assessment periods while developing good operating practices.

[Application 0250020-031-AC; and Rules 62-212.300(1)(e) and 62-210.370, F.A.C.]

A. Pyro-processing Kiln and ASF Feed Systems

This section of the permit addresses the following emissions units.

ID No.	Emission Unit Description
028	Pyro-processing/Raw Mill System with new equipment: Replacement main kiln burner Mechanical Feed System for Alternative Solid Fuels Pneumatic Feed System for Alternative Solid Fuels
037	Grinding and Screening Operations for Alternative Solid Fuels (Re-processing)

COMPLIANCE WITH EXISTING PERMIT CONDITIONS

1. Existing Permits: This permit supplements all existing valid air permits. Unless otherwise specified, the permittee shall continue to comply with all applicable conditions from valid air construction and operation permits. [Rule 62-4.070(3), F.A.C.]

EQUIPMENT

2. New Equipment: The permittee is authorized to construct and operate the following permanent equipment for firing alternative solid fuels (ASF) in the upper precalciner section of the pyro-processing kiln system.

   a. *Mechanical and Pneumatic Precalciner Handling and Feed Systems*. Each feed system shall be designed to handle solid fuels with multiple points of injection to accommodate ASF particle size, density and heating value. The nominal feed rate of each feed system is 15 tons of ASF per hour.

      (1) The mechanical feed system shall consist of a bucket elevator system (or equivalent), a mechanical feeder, a weigh-belt, a load hopper, conveyors, storage bins and other associated equipment.

      (2) The pneumatic feed system shall consist of a system of fans (as necessary) and ductwork, a mechanical feeder, a weigh-belt, a load hopper, conveyors, storage bins and other associated equipment.

      To the extent practicable, components of the precalciner feed systems shall be substantially enclosed or covered to prevent the loss of and fugitive dust emissions. Each feed system shall be integrated into the existing kiln data system to provide real time data on the ASF feed rates to the kiln system operators. The ASF feed rate shall be recorded along with the other fuel feed rates. *{Permitting Note: For reference, the maximum design heat input rate of the precalciner burner is 385 MMBtu/hour.}*

   b. *Main Kiln Burner System*. The permittee is authorized to replace the main kiln burner system with a multi-fuel burner and related feed equipment specifically designed for co-firing ASF with coal and other authorized fuels. The maximum design heat input rate for the main kiln burner is 290 MMBtu/hour. The permittee shall submit details of the final main kiln burner design once it is complete (fuel types, design heat input rates and schematics).

   c. *Grinding and Sizing Equipment*. As an option, the permittee is authorized to install grinding, shredding, screening and sizing equipment to re-process the ASF on site if necessary. This equipment will be powered by electric motors or diesel engines. In addition, the diesel engines shall comply with any applicable NSPS or NESHAP.

   [Design, Application No. 0250020-031-AC and Rule 62-4.070(3), F.A.C.]

AUTHORIZED FUELS

3. Traditional Fuels: The permittee is authorized to fire the following fossil fuels: coal, petroleum coke,

natural gas, No. 2 fuel oil, No. 6 fuel oil and on-specification used oil. The permittee is also currently authorized to fire whole tires in the precalciner. *{Permitting Note: This condition clarifies that the pyro-processing kiln is not limited to firing only "bituminous" coal and is capable of firing other coals.}* [Project Nos. 0250020-017-AC and 0250020-027-AC]

4. ASF: Subject to the ASF Acceptance Criteria, the permittee is authorized to co-fire authorized fuels with any of the following ASF.

   a. *Plastics*, which includes materials such as polyethylene plastic used in agricultural and silvicultural operations. This may include incidental amounts of chlorinated plastics.

   b. *Tire-Derived Fuel (TDF)*, which includes shredded used tires with steel belt material, shredded used tires without steel belt material and tire fluff.

   c. *Manufacturer Reject Roofing Shingles*, which consists of manufacturer reject roofing shingles that were never installed with the bulk of the incombustible grit material removed and which the manufacturer certifies as being made without asbestos.

   d. *Clean Cellulosic Biomass*, which includes materials such as clean untreated lumber, tree stumps, tree limbs, slash, bark, sawdust, sander dust, wood chips scraps, wood scraps, wood slabs, wood millings, wood shavings and processed pellets made from wood or other forest residues.

   e. *Manufactured Cellulosic Biomass*, which includes materials such as preservative-treated wood that may contain treatments such as creosote, copper-chromium-arsenic (CCA), or ammoniacal copper quaternary (AQC), painted wood, or resinated woods (plywood, particle board, medium density fiberboard, oriented strand board, laminated beams, finger-jointed trim and other sheet goods). The permittee shall not fire more than 500 lb/hour averaged on a 7-day block average basis of segregated streams of wood treated with copper-chromium-arsenic (CCA) compounds. *{Permitting Note: To the extent practicable, operators plan to introduce CCA-treated wood at low rates and co-fire with other ASF. The majority of copper, chromium and arsenic compounds are expected to be integrated into the cement clinker product.}*

   f. *Agricultural Organic Fibrous Byproducts*, which includes materials such as peanut hulls, rice hulls, corn husks, citrus peels, cotton gin byproducts, animal bedding and other similar types of materials with a suitable heating value.

   g. *Pre-Consumer Paper*, which includes materials such as printing and writing paper; household and sanitary paper; wrapping and packaging paper; paper board; chipboard; Kraft liner, writing and packaging paper; fluting; other wrapping and packaging paper; folding boxboard; other paperboard; polymer laminated wrapping paper; game boards and boxes; foil wrapping paper; thermal papers; specialty papers for filtration or hygienic applications; adhesive labels; waxed corrugated cardboard; other miscellaneous coated papers; fabrics and textiles such as dyed/finished natural fibers; dyed/finished natural fiber woven/scrap trim; polymer fiber woven scrap trim; and un-dyed/unfinished natural or synthetic fiber scrap trim.

   h. *Carpet-Derived Fuel*, which includes shredded new, reject or used carpet with incidental related materials (e.g., tack-down strips, nails, etc.).

   i. *Engineered Fuel*, which is a composition of carefully blended ASF and other non-hazardous byproducts and materials specifically designed for use as a fuel.

   j. *ASF Mix*, which includes a blend of any of the above mixed at the plant.

   [Application No. 0250020-031-AC and Rule 62-210.200(PTE), F.A.C.]

5. ASF Acceptance Criteria: The permittee shall only accept and fire ASF that meets the following criteria.

   a. *Prohibited Materials*: The permittee is prohibited from firing the following materials in the pyro-processing system: hazardous waste, nuclear waste and radioactive waste. The permittee shall not knowingly fire biomedical waste, asbestos-containing waste, whole batteries, explosive materials and unsorted municipal garbage. These prohibited materials shall not be used to manufacture engineered fuels.

   b. *Acceptance Criteria*: To be accepted as an authorized fuel, ASF delivered to the site shall have a lower heating value greater than 3500 Btu/lb. If a shipment does not meet the Acceptance Criteria, the permittee shall reject the shipment. The Acceptance Criteria is based on the analytical results of the ASF supplier or by the permittee. *{Permitting Note: For internal plant needs, the permittee may establish other acceptance criteria such as particle sizing.}* [Application No. 0250020-031-AC and Rule 62-4.070(3), F.A.C.]

6. ASF Target Levels: Targets levels are the desired ASF properties for as-fired fuel in the system. Target Levels are not enforceable and do not apply to individual raw materials or fuels.

Parameter	**Target Levels***
Lower Heating Value	> 5000 Btu/lb
Moisture	< 30% by weight
Ash	< 25% by weight
Sulfur	< 4.0% by weight
Chlorine	< 0.50% by weight
Chromium	< 100 ppmw (mg/kg)
Lead	< 50 ppmw (mg/kg)
Mercury	< 0.3 ppmw (mg/kg)

   * All concentrations are dry basis.

   [Application No. 0250020-031-AC and Rule 62-4.070(3), F.A.C.]

   {Permitting Note: Kiln operators will review operations and make potential adjustments, as necessary, to accommodate ASF used in the kiln. The kiln operators will help ensure production of high-quality cement clinker.}

7. Receiving ASF: For ASF received at the plant, the permittee shall comply with the following requirements.

   a. The permittee shall reject any shipment that does not meet the Acceptance Criteria.

   b. All ASF received at the plant shall be in covered trucks and/or enclosed containers. When unloading and handling ASF, the permittee shall take reasonable precautions shall be taken to prevent fugitive dust emissions. The permittee shall also visually check the delivered ASF for particle size and components.

   c. The permittee shall record the amount and type of each ASF received.

   d. Fuel Analyses Parameters: The following information shall be included when reporting the analytical results for an ASF: lower heating value (Btu/lb) of ASF; moisture, ash, volatiles, fixed carbon, sulfur and chlorine content (percent by weight); and chromium, lead and mercury contents (ppmw). All concentrations are on a dry basis. Reject roofing shingles shall include a certification from the

manufacturer to be made without asbestos.

e. Sampling/Analysis Frequency:

(1) *Tire-Derived Fuel*: No sampling/analysis is required since the typical analytical results for this manufactured product are well known.

(2) *Plastics, Reject Roofing Shingles, Agricultural Organic Fibrous Byproducts, Pre-Consumer Paper and Carpet-Derived Fuel*: The permittee shall obtain the analytical results for a representative sample of ASF collected during each ASF assessment. In addition, the permittee shall obtain the analytical results for one representative sample of ASF during each subsequent calendar year that an ASF is fired.

(3) *Clean Cellulosic Biomass, Manufactured Cellulosic Biomass and Engineered Fuel*: The permittee shall obtain the analytical results for two representative samples of ASF collected during each ASF assessment (at least 15 days apart). For every subsequent 10,000 tons of each ASF received on site, the permittee shall obtain the analytical results for a representative sample of the ASF.

(4) *ASF Mix*: No sampling/analysis is required since analytical results will be available for the individual ASF.

[Application No. 0250020-031-AC; Rules 62-4.070(3) and 62-296.320, F.A.C.]

8. Storing and Handling ASF: The ASF shall be stored:

a. Under cover or in covered trailers or containers;

b. On top of a paved or compacted clay surface;

c. Separately from other ASF unless purposely being mixed for firing;

d. To promote containment and prevent contamination of air, water and soil; and

e. Storage design should be appropriate to maintain the quality of the materials (e.g., first in, first out).

{Permitting Note: Fire suppression systems and planning (e.g., pile dimensions, buffers, water sprinkler systems, CO_2 blanketing, etc.) will be conducted as required by local Fire Department requirements.}
[Application No. 0250020-031-AC; Rules 62-4.070(3) and 62-296.320, F.A.C.]

EQUIPMENT SHAKEDOWN AND ASF ASSESSMENTS

9. Shakedown of Main Kiln Burner System and ASF Assessments: The permittee shall comply with the emissions standards and terms of all valid air permits during shakedown of the main kiln burner and ASF assessments.

a. *Burner System Shakedown with Fossil Fuel*: After replacing the main kiln burner and related injection equipment, the permittee is authorized 30 operational days for shakedown of this new equipment to ensure proper installation and operation when firing fossil fuel.

b. *Initial ASF Assessment*: After completing the shakedown of the main kiln burner system on fossil fuel, the permittee is authorized 90 operational days to introduce the initial ASF (i.e., the first assessed material of the listed materials in Specific Condition 4) ASF co-fired with fossil fuel and to develop good operating practices for the ASF resulting in steady kiln system operation.

c. *Subsequent ASF Assessments*: For subsequent ASF assessments at the main kiln burner, the permittee is authorized 60 operational days to introduce a new ASF co-fired with fossil fuel and to develop good operating practices for the ASF resulting in steady kiln system operation.

The Division of Air Resource Management may approve a written request by the permittee for an additional shakedown and assessment periods due to specific extenuating circumstances. [Application No. 0250020-031-AC and Rule 62-4.070(3), F.A.C.]

10. Shakedown of Precalciner Fuel Feeding and Handling Equipment and ASF Assessments: The permittee shall comply with the emissions standards and terms of all valid air permits during shakedown of the precalciner fuel feeding and handling equipment and ASF assessments.

    a. *Equipment Shakedown with Initial ASF Assessment*: After completing construction of a feed/handling system, the permittee is authorized 90 operational days to introduce the initial ASF for that feed/handling system for shakedown of this new equipment to ensure proper installation as well as develop good operating practices for the ASF resulting in steady kiln system operation.

    b. *Subsequent ASF Assessments*: For subsequent ASF assessments, the permittee is authorized 60 operational days to introduce a new ASF to develop good operating practices for the ASF resulting in steady kiln system operation.

    c. During each ASF assessment, the permittee shall measure and record the representative temperature at each mechanical or pneumatic feed injection point.

    The Division of Air Resource Management may approve a written request by the permittee for an additional shakedown and assessment period due to specific extenuating circumstances. [Application No. 0250020-031-AC and Rule 62-4.070(3), F.A.C.]

11. Sampling/Analysis by Permittee: For each ASF assessment, the permittee shall obtain analytical results of the ASF as required in Condition 7. [Rule 62-4.070(3), F.A.C.]

PERFORMANCE REQUIREMENTS

12. Operation: Alternative solid fuels shall only be fired once the kiln has achieved steady operation, temperatures and production (i.e., when raw materials are introduced). [Rule 62-4.070(3), F.A.C.]

    a. Depending on the ASF to be fired, the operator shall carefully select the appropriate ASF feed system and feed location according to the nature of the ASF to promote efficient combustion and reduce emissions impacts. Key ASF parameters include the particle size, heating value, moisture content, chlorine content and ash content. ASF shall be introduced only in the high-temperature combustion zones of the main kiln burner, the precalciner burner or appropriate secondary firing points in the precalciner.

    b. Based on the ASF assessments and fuel analyses, the permittee shall develop a written informational plan identifying operating practices for firing ASF to provide and maintain steady kiln operation. Elements of the plan are not enforceable and may be changed by the plant at any time. The purpose of the plan is to make all operators aware of good operating practices for ASF. *{Permitting Note: As a matter of practical operations, the kiln operators will gradually introduce ASF to provide steady kiln operations and minimize emissions. Once the desired ASF fuel feed rate is achieved, the operator will maintain a constant feed rate to promote efficient combustion, minimize emissions and steady-state operation. Indicators of complete combustion include flue gas oxygen content, CO levels and THC levels. As necessary, operators will review the ASF characteristics for possible adjustments to promote steady operation (e.g., account for increased flue gas volume and velocity from elevated moisture content, high chlorine and/or sulfur contents that may cause buildups, etc.).}*

    c. Operators shall discontinue firing ASF if:

        (1) One of the CEMS, COMS or other continuous monitors indicates a non-compliance issue;

(2) One of the CEMS, COMS or other continuous monitors is down for more than two consecutive hours; or

(3) The operator is made aware that the kiln is producing off-specification clinker due to ASF. The firing of that ASF may resume once the issue is addressed and corrective action taken.

13. Reasonable Precautions to Prevent Fugitive Dust: The permittee shall employ the following "reasonable precautions" to minimize fugitive dust emissions at the plant:

a. Substantially enclose conveyors and bucket elevators to prevent ASF loss and fugitive dust emissions;

b. Store ASF under cover;

c. Conduct secondary processing (shredding, screening and sizing) under cover;

d. If necessary to prevent fugitive dust caused by any ASF from leaving the plant property, the permittee shall apply water (or other environmentally acceptable dust suppressants) to the ASF; otherwise, the ASF shall be kept dry to facilitate burning; and

e. Follow the "reasonable precautions" specified in the current Title V air operation permit.

[Rules 62-4.070(3) and 62-296.320, F.A.C.]

MONITORING REQUIREMENTS

14. CEMS/COMS: The permittee shall continuously monitor the following with data collected by CEMS/COMS to demonstrate compliance with the emissions standards in the current Title V air operation permit: CO, NO_X, SO_2 and THC (for VOC) emissions and opacity. Mercury emissions shall be determined by sampling/analysis and material balance as specified in the Title V air operation permit. The default value for the mercury content of tires and TDF shall be 0.0081 µg/g; no additional sampling/analysis is required. [Application 0250020-031-AC and Rule 62-4.070(3), F.A.C.]

15. Operations and Emissions: The permittee shall continuously monitor the: fuel feed rates, kiln feed rate, clinker production rate and baghouse inlet temperature. [Application No. 0250020-031-AC and Rule 62-4.070(3), F.A.C.]

TESTING REQUIREMENTS

16. Analytical Methods: The permittee shall use the following analytical methods to determine the composition of the ASF.

Parameter	Analytical Methods
Moisture, Volatiles, Ash and Fixed Carbon	Proximate Analysis appropriate for given fuel
Carbon, Hydrogen, Nitrogen Sulfur and Oxygen	Ultimate Analysis appropriate for given fuel
Heating Value	ASTM E711 - 87(2004) Standard Test Method for Gross Calorific Value of Refuse-Derived Fuel by the Bomb Calorimeter, or ASTM D5468 - 02(2007) Standard Test Method for Gross Calorific and Ash Value of Waste Materials
Chlorine	EPA SW-846 or EPA Method 9056
Mercury	EPA 7470A/7471A
Other Metals	EPA SW-846 or EPA Method 6010B

Other equivalent methods may be used with prior written approval of the Division of Air Resource Management. [Rule 62-4.070(3), F.A.C.]

17. Compliance Stack Tests: The permittee shall continue to conduct stack tests in accordance with the methods and requirements in current Title V air operation permit demonstrate compliance with the emissions standards. The required stack tests for PM and dioxins/furans shall be conducted while firing an ASF that has completed the ASF assessment period. [Rule 62-297.310(7)(a)4, F.A.C.]

NOTIFICATIONS, RECORDS AND REPORTS

18. Shakedown Notifications: Within five days of completing construction, the permittee shall notify the Compliance Authority and provide a schedule for shakedown and the initial ASF assessment. The Compliance Authority may waive this deadline. [Rule 62-4.070(3), F.A.C.]

19. ASF Assessment Notifications: At least five days prior to firing each new type of ASF material listed in Specific Condition 4, the permittee shall notify the Compliance Authority with a proposed schedule. The Compliance Authority may waive this deadline. [Rule 62-4.070(3), F.A.C.]

20. Reports for Shakedown and ASF Assessments: During periods of authorized shakedowns and ASF assessments, the permittee shall document the shakedown and/or ASF assessment period. These periods may end early when the operator is confident that good operating practices have been defined for the ASF that result in steady kiln system operation. Within 45 days of completing a shakedown and/or assessment of each ASF material listed in Specific Condition 4, the permittee shall provide a written report summarizing the following information collected from the shakedown and/or ASF assessment period.

    a. For a 24-hour period representing good operating practices and steady kiln operation, report: the representative analysis of the ASF fired; hourly ASF and fossil fuel firing rates; hourly clinker production; hourly CO, NOx, SO_2 and THC emissions data from the CEMS; the 6-minute block averages from the COMS; and the inlet temperature to main kiln baghouse (3-hour average). Identify the good operating practices resulting in steady kiln operation.

    b. The ASF assessments may occur over several years. Emissions from the initial ASF assessment of a new fuel may be excluded from the report requiring a comparison of actual-to-baseline emissions (Rules 62-212.300(1)(e) and 62-210.370, F.A.C.) since operators are still establishing good operating practices and the ASF will not have been available for the full calendar year. To exclude emissions data collected during an authorized shakedown and/or ASF assessment period from this report, the permittee shall submit the following information for: total clinker production; fossil fuel fired; ASF fired; total CO, NOx, SO_2 and THC emissions (tons). Excluded data shall be replaced with data estimated from: the actual clinker production rate; and an emissions factor based on the average emission rates from the rest of the year (i.e., all periods except the shakedown and/or ASF assessment periods).

    [Rules 62-4.070(3) and 62-210.370 and 62-212.300, F.A.C.]

21. Stack Test Reports: The permittee shall prepare and submit reports for all required tests in accordance with the requirements specified in Appendix D (Common Testing Requirements) of this permit. [Rule 62-297.310(8), F.A.C.]