Newberry Cement Plant
AIRS ID - 0010087

CISWI WASTE MANAGEMENT PLAN

For purpose of compliance with Florida Implementation Plan of 40 CFR 60 Subpart DDDD

PREPARED BY:

Koogler and Associates, Inc.
4014 NW 13th St.
Gainesville, FL 32609

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SECTION 1 – INTRODUCTION

Argos Cement, LLC - Argos Newberry Cement Plant is a Portland cement plant. This facility consists of raw material handling and storage, raw mill systems, kiln systems clinker handling, finish grinding operations, cement handling, loading, and bagging operations, and coal handling and grinding operations.

1.1 Description of a Waste Management Plan

Argos Cement LLC (Argos) asserts kiln systems 1 and 2 at the Newberry Cement Plant to be subject to Rule 62-204.800(9)(f), F.A.C. which incorporates 40 CFR 60, Subpart DDDD (i.e., Commercial Industrial Solid Waste Incinerator (CISWI)) rule for existing units. Florida Department of Environmental Protection (FDEP) revised its 111(d) Plan for implementing CISWI. This revised plan was submitted to EPA on February 6, 2014. The plan revisions are under review by EPA. The 111(d) Plan implements the exact language of 40 CFR 60, Subpart DDDD (40 CFR 60.2500 to 60. 2875) for existing units, including cement kilns, that are determined to be subject to CISWI, with the exception of the applicability date for control and waste management plans[1]. Beyond the applicability date, Rule 62-204.800(9)(f)3, F.A.C. directly adopts the waste management plan requirements set forth in 40 CFR 60.2555 through 60.2630. Therefore, this document refers to CISWI rule citations even though the CISWI rules are proposed by FDEP to be incorporated in to the 111(d) Plan through Rule 62-204.800(9)(f), F.A.C.

Argos notified FDEP on June 4, 2014 to be subject to CISWI. The plan must meet the following conditions.

§60.2620 What is a waste management plan?

A waste management plan is a written plan that identifies both the feasibility and the methods used to reduce or separate certain components of solid waste from the waste stream in order to reduce or eliminate toxic emissions from incinerated waste.

§60.2625 When must I submit my waste management plan?

You must submit a waste management plan no later than the date specified in table 1 of this subpart for submittal of the final control plan.

§60.2630 What should I include in my waste management plan?

A waste management plan must include consideration of the reduction or separation of waste-stream elements such as paper, cardboard, plastics, glass, batteries, or metals; or the use of recyclable materials. The plan must identify any additional waste management measures, and the source must implement those measures considered practical and feasible, based on the effectiveness of waste management measures already in place, the costs of additional measures, the emissions reductions expected to be achieved, and any other environmental or energy impacts they might have

[1] Rule 62-204.800(9)(f)2, F.A.C. and Rule 62-204.800(9)(f)3, F.A.C.

According to 40 CFR 60.2620, a Waste Management plan is a written plan that identifies both the feasibility and the methods used to reduce or separate certain components of solid waste from the waste stream in order to reduce or eliminate toxic emissions from incinerated waste. It must include consideration of the reduction or separation of waste-stream elements such as paper, cardboard, plastics, glass, batteries, or metals; or the use of recyclable materials. For the purposes of this Waste Management plan, the term solid waste will utilize the RCRA definition of "solid waste" in 42 U.S.C. § 6901. RCRA defines "solid waste" as : *any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges.* [2]

The plan must identify any additional waste management measures, and the source must implement those measures considered practical and feasible, based on the effectiveness of waste management measures already in place, the costs of additional measures, the emissions reductions expected to be achieved, and any other environmental or energy impacts they might have.

This plan is submitted along with the CISWI control plan that is due August 7, 2015.

1.2 Applicability to the Argos Newberry Cement Plant

Argos is required to submit a Waste Management plan. Unlike typical CISWI systems, Argos does not bring random, un-sorted waste materials on site which are then sorted with the resulting sorted materials either being combusted or disposed of via a Waste Management Plan. Instead, Argos brings on-site a limited type (discussed below) of pre-sorted waste materials that are combusted and entirely incorporated into the final product. This combustion takes place in their waste-burning kiln. As defined in Subpart DDDD, waste-burning kiln is defined as a kiln that is heated, in whole or in part, by combusting solid waste. Secondary materials used in Portland cement kilns shall not be deemed to be combusted unless they are introduced into the flame zone in the hot end of the kiln or mixed with the precalciner fuel. While the incoming material is waste, the waste is not random materials, given the restrictions on clinker quality and kiln degradation. Therefore, the common notion of waste management at a typical waste combustor (e.g., Waste to Energy combustor of MSW) does not entirely fit the operation at Argos. Therefore the cited rule language describing the content requirements of a typical CISWI Waste Management Plan above is explained below in the context of solid waste combustion and cement production at Argos.

Argos has been approved to use specific categories of alternative fuel material (AFM) in their pyroprocessing system that include solid waste materials.[3] It should be noted that the ten AFM categories that were permitted under the context of the applicable cement

[2] D.C. Court ruling on June 3, 2015 upheld 40 CFR 241 determinations and applied this RCRA definition.
[3] Air Permit No. 0010087-051-AC provides more details of example materials.

NESHAP regulations at the time of that permitting for when the revisions to CISWI and the NHSM rules were not final. The currently applicable CISWI rule includes the broad definition of solid waste which essentially encompasses the range of permitted AFM categories. For the purposes of this Waste Management Plan, the listed categories below are representative of the anticipated wastes and include a broad category of Other Non-hazardous Materials. This Plan will focus on those AFM categories and discuss the consideration of the reduction or separation of waste-stream elements for each. The Plan will be modified as necessary if other categories were to be used.

Argos has no waste materials as ingredients that are combusted (as defined below) and therefore, no such ingredients are addressed in this Plan.

- *Waste-burning kiln* means a kiln that is heated, in whole or in part, by combusting solid waste (as the term is defined by the Administrator in 40 CFR part 241). Secondary materials used in Portland cement kilns shall not be deemed to be combusted unless they are introduced into the flame zone in the hot end of the kiln or mixed with the precalciner fuel.

SECTION 2 – WASTE MANAGEMENT AT THE NEWBERRY CEMENT PLANT

A listing of the ten AFM categories, and examples of fuel materials in each category, are presented in the table below. Following the table, a more detailed analysis of each category will be discussed.

AFM Category	Waste Material Input
Plastics	Polyethylene plastics used in agricultural and silvicultural operations. Plastics of other grades from manufacturing processes or recycling. May include incidental amount of chlorinated plastics.
Tire-Derived Fuel (TDF)	Whole and shredded tires with or without steel belt material, including portions of tires as tire fluff.
Roofing Materials	Roofing shingles and related roofing materials when the bulk of the incombustible grit material has been separated and when the material is not subject to regulations as an asbestos containing material pursuant to NESHAP Subpart M of 40 CFR 61.
Cellulosic Biomass - Untreated	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.
Cellulosic Biomass - Treated	Preservative-treated wood that may contain treatments such as creosote, copper-chromium-arsenic (CCA), or alkaline 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).
Agricultural Biogenic Materials	Peanut hulls, rice hulls, corn husks, citrus peels, cotton gin byproducts, animal bedding and other similar types of materials with a suitable heating value.
Carpet-Derived Fuel	Shredded new, reject or used carpet with incidental related materials (e.g., tack-down strips, nails, etc.).
Engineered Fuel	Fuel engineered to have targeted, consistent fuel properties such as: calorific value, moisture, particle size, ash content, and volatility.
Petroleum Byproducts	Used oil (on-specification and off-specification) as regulated pursuant to 40 CFR 279. In addition, this category includes coal tar sludge and carbon black residue (commonly known as charcoal).
ASF Mix	A blend of any of the above.
Other Non-hazardous Materials	Any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges.

2.1 Plastics

Plastic materials used as a fuel source originate at a third-party location and are purchased specifically to be used as fuel. If the delivered fuel does not meet specifications required for use as a fuel source, the fuel will not be used in the pyroprocessing system. This includes noticeably high amounts of chlorinated plastics. The chlorine content of the fuels used in the kiln is process-limited to ensure acceptable clinker quality and limit kiln degradation. In fact, preheater tower buildup and clogs are primarily and directly related to the amount of chlorine in the gas stream. Extended periods of chlorine at levels above 0.2 to 0.3 percent in fuels are expected to cause build up in the preheater tower.

Methods that will be used to limit unwanted wastes will be through fuel manufacturer certifications, visual inspections, and physical removal if unintended wastes are noticed.

2.2 Tire-Derived Fuel (TDF)

Tire-Derived fuel has been used as a fuel source at the plant for many years. It is a highly consistent fuel product and widely used at cement plants throughout the Country. The TDF may consist of tires from an “established tire collection program” or other scrap tires approved for use by the State, which may consist of discarded tires.

Methods that will be used to limit unwanted wastes will be through fuel manufacturer certifications, visual inspections, and physical removal if unintended wastes are noticed.

2.3 Roofing Materials

Roofing materials used as fuel products include primarily reject roofing shingles that were never installed or tear-off shingles with the bulk of the incombustible grit material removed and which have been certified as being made without asbestos. The purpose of such as a certification is to ensure 40 CFR 61 Subpart M is not applicable.

Methods that will be used to limit unwanted wastes will be through fuel manufacturer certifications, visual inspections, and physical removal if unintended wastes are noticed.

2.4 Cellulosic Biomass - Untreated

Untreated cellulosic biomass may be processed onsite using appropriate wood chippers, screeners, and other necessary equipment. As well, these materials may be processed by third-party fuel suppliers.

For either method of generation, methods to limit the amount of potential pollutants in the fuel stream will be followed. These methods include fuel manufacturer certifications, visual inspections, and physical removal if unintended wastes are noticed.

2.5 Cellulosic Biomass - Treated

Treated cellulosic biomass may be processed onsite using appropriate wood chippers, screeners, and other necessary equipment. As well, these materials may be processed by third-party fuel suppliers. For either method of generation, methods to limit the amount of potential pollutants in the fuel stream will be followed. In addition, Air Permit No.

0010087-051-AC limits the rate of input amount of CCA-treated fuel used in the kiln system.

Methods that will be used to limit the potential pollutants in the fuel stream include fuel manufacturer certifications, visual inspections, and physical removal if unintended wastes are noticed.

2.6 Agricultural Biogenic Materials

Agricultural biogenic materials may be processed onsite using appropriate wood chippers, screeners, and other necessary equipment. As well, these materials may be processed by third-party fuel suppliers.

For either method of generation, methods to limit the amount of potential pollutants in the fuel stream will be followed. These methods include fuel manufacturer certifications, visual inspections, and physical removal if unintended wastes are noticed.

2.7 Carpet-Derived Fuel

Carpet-derived fuel may be processed onsite using appropriate chippers/grinders, screeners, and other necessary equipment. As well, these materials may be processed by third-party fuel suppliers. Historically, carpet-derived fuel has been used at many cement production facilities. For either method of generation, methods to limit the amount of potential pollutants in the fuel stream will be followed.

These methods include fuel manufacturer certifications, visual inspections, and physical removal if unintended wastes are noticed. In addition to providing a beneficial re-use for these materials, which would otherwise be landfilled, carpet-derived fuel provides a consistent and useful heat input.

2.8 Engineered Fuel

Engineered fuels originate at a third-party location and are purchased or accepted specifically to be used as fuel. If the delivered fuel does not meet specifications required for use as a fuel source, the fuel will not be used in the pyroprocessing system.

Methods that will be used to limit unwanted wastes will be through fuel manufacturer certifications, visual inspections, and physical removal if unintended wastes are noticed.

2.9 Petroleum Byproducts

Petroleum byproducts used as fuels at the Newberry Cement Plant includes used oil (both on and off-specification). These materials are regulated pursuant to 40 CFR 279. This AFM category may also include coal tar sludge and carbon black residue (charcoal). Further processing of these materials using appropriate chippers/grinders, screeners, and other necessary equipment may be carried out onsite.

Methods that will be used to limit unwanted wastes will be through fuel manufacturer certifications, visual inspections, and physical removal if unintended wastes are noticed.

2.10 ASF Mix

ASF mix fuels typically originate at a third-party location and blended onsite to be used as fuel. If any delivered fuel streams do not meet fuel specifications, the fuel will not be used in the pyroprocessing system.

Methods that will be used to limit unwanted wastes will be through fuel manufacturer certifications, visual inspections, and physical removal if unintended wastes are noticed.

2.11 Other NHSM

In addition to the fuels categories outlined above, the plant may use other types of non-hazardous solid waste. The materials should be ensured to be non-hazardous, and have a sufficient BTU heating value. Overall and as noted above, other non-hazardous materials should meet the RCRA definition of "solid waste" in 42 U.S.C. § 6901. RCRA defines "solid waste" as : *any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges*.