



GEORGIA

DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL PROTECTION DIVISION

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NARRATIVE

TO: Jeng-Hon Su

FROM: Dawn Wu

DATE: April 7, 2022

Facility Name: **Bimbo Bakeries QSR, LLC**
AIRS No.: 185-00117
Location: Valdosta, GA (Lowndes County)
Application #: 28319
Date of Application: March 2, 2022

Background Information

Bimbo Bakeries QSR, LLC – Valdosta Plant (hereinafter “facility”) intends to construct and operate a new commercial bakery located in an existing building located at 1802 Bimbo QSR Blvd (Reference location: 580 St. Augustine Rd. S) in Valdosta, Lowndes County, GA.

The facility will include one bakery line that will produce a variety of roll products. The facility will include one 6.222 MMBtu/hr natural gas-fired baking oven that has a maximum throughput of 1200 pieces per minute. The roll products will utilize a yeast fermentation process that will result in the emissions of VOCs, primarily ethanol. There will also be two (2) flour silos and insignificant combustion sources (hot water heaters, makeup air units, etc.).

Purpose of Application

On March 2, 2022, Bimbo Bakeries QSR, LLC – Valdosta Plant submitted an application requesting the construction and operation of a new commercial bakery facility. Facility proposed to take the 96 tpy facility-wide VOC emissions limit for the Title V Major Source avoidance. The Public Advisory started on March 16, 2022 and expired on April 15, 2022.

Updated Equipment List

Emission Units			Associated Control Devices	
Source Code	Description	Installation Date	Source Code	Description
P001*	Bakery Oven, natural gas fired, low NOx burner, 6.222 MMBtu/hr	2022	--	--
S01*	Flour Silo	2022	--	--
S02*	Flour Silo	2022	--	--

*Proposed within current application

Emissions Summary

Volatile organic compounds (VOC) emissions result from the fermentation process and from natural gas combustion. Combustion by-products such as sulfur dioxide (SO₂), nitrogen oxides (NO_x), particulate matter (PM), VOC, carbon monoxide (CO), hazardous air pollutants (HAP), and greenhouse gases (GHG) are generated by the natural gas fired ovens and fuel burning sources. Note that VOC emissions from fuel combustion in the oven are much below 1 ton per year (tpy).

Facility-Wide Emissions
(in tons per year)

Pollutant	Potential Emissions	Actual Emissions
PM/PM ₁₀ /PM _{2.5}	0.124/0.05/0.05	0.124/0.05/0.05
NO _x	4.02	3.44
SO ₂	0.02	0.01
CO	2.41	2.07
VOC	<95	<95
Max. Individual HAP	0.00	0.00
Total HAP	0.00	0.00
Total GHG	3554	3048

Regulatory Applicability

Georgia Rule Georgia Rule 391-3-1-.02 (b) Visible Emissions – The non-combustion process units at the facility are subject to 40% opacity limit.

Georgia Rule 391-3-1-.02(e) Particulate Emissions from Manufacturing Processes – All process equipment, including the oven, are subject to the particulate matter emission limits.

Georgia Rule 391-3-1-.02(g) Sulfur Dioxide – All fuel burning sources are subject to GA Rule (g). Due to the combustion of only gaseous fuels, these units are expected to comply with the sulfur content limit in GA Rule (g).

Georgia Rule 391-3-1-.02(n) Fugitive Emissions – General fugitive emissions requirements for the facility.

Permit Conditions

Condition 2.1 limits the VOC emissions from the entire facility to less than 95 tons during any twelve consecutive month period. The 95 tpy limit is based on the total emissions from the bakery process. VOC emissions from fuel combustion in the oven are much less than 1 tpy. The VOC emissions generated through the use of cleaning and sanitizing materials to clean the equipment (EV emissions) has

been considered by the Division. The study from other bakery facilities in Georgia shown that annual EV VOC emissions are no more than 5 tpy. Therefore, under the most extreme case, 95 tpy VOC emissions cap should provide an adequate 5-tpy VOC emission allowable for EV emissions and fuel burning sources emissions while the facility will remain a minor source under Title V of 1990 CAAA. This will allow the facility to track only baking VOC emissions.

Condition 2.2 limits visible emissions from all emission units.

Condition 2.3 requires that fuel burning sources fire natural gas only.

Condition 2.4 limits particulate emissions from all emission units.

Condition 2.5 subjects the facility to Georgia Rule (n).

Condition 7.1 requires the facility submitting written notification to the Division within 15 days after the startup.

Condition 7.2 requires the facility to keep records for all variables used in the equation in Condition 7.3.

Condition 7.3 contains the equations used to calculate the VOC emission factor and monthly VOC emissions from the baking operation. The equation is derived based on source testing as presented in EPA Publication 453/R-92-017 titled “Alternative Control Technology Document for Bakery Oven Emissions” including adding the destruction efficiency requirements.

Condition 7.4 requires the facility to calculate the monthly VOC emissions from the bakery process. If the VOC emission rate is greater than 7.9 tons per month, the facility must notify the Division.

Condition 7.5 requires the facility to calculate the consecutive 12-month rolling total of VOC emissions from the bakery process. If the VOC emission rate is greater than 95 tons, the facility must notify the Division.

Toxic Impact Assessment

Toxic impact assessment was not required because the facility wide ethanol emissions are restricted below 95 tpy and the MER for ethanol is 109.5 tpy.

Summary & Recommendations

Bimbo Bakeries QSR, LLC – Valdosta Plant in Valdosta is considered a synthetic minor source due to the 95 tpy facility-wide VOC emission limit. The facility is an area source for HAPs. The Public Advisory expired on April 15, 2022; no comments were received. Compliance responsibility is currently assigned to SSCP. I recommend issuance of Air Permit No. 2051-185-0117-S-01-0 to the Bimbo Bakeries QSR, LLC – Valdosta Plant in Valdosta.