

NARRATIVE

TO: Hamid Yavari
FROM: Safae El kaddouri
DATE: February 28, 2023

Facility Name: **C.W. Matthews Contracting Co., Inc. Plant #CWM62**
AIRS No.: 223-00025
Location: Dallas, Georgia (Paulding County)
Application #: 28697
Date of Application: January 25, 2023

Background Information

C.W. Matthews Contracting Co., Inc. Plant #CWM62 submitted a SIP permit application (assigned Application No. 28697) for the construction and operation of an asphalt plant. The plant is located at 3513 Mulberry Road, Dallas, Georgia 30132 (Paulding County). The facility requested to limit the production of finished asphalt to 600,000 tons per year and limit fuel consumption (Fuel oil and/or RFO) to 800,000 gallons/year. The fuel sulfur content is also limited to 1.0 percent. The heat input capacity of the drum burner is 110 MMBtu/hr. The rated design capacity of the plant is 450 tons/hour of hot mix asphalt. PM emissions from the asphalt plant dryer are controlled using a baghouse.

The facility purposed replacing Air Quality Permit No 2951-223-0025-S-02-0 that was issued on November 16, 2006. The Division has decided to issue Permit No 2951-223-00025-S-03-0 to the facility and prohibit operating both plants simultaneously.

Updated Equipment List

The table below lists all equipment which is referenced specifically by the permit, or for which an applicable regulation exists. This list does not include equipment that is exempt from permitting, though some exempt equipment is discussed within this narrative.

Emission Units			Associated Control Devices	
Source Code	Description	Installation Date	Source Code	Description
DBBL*	Dryer/Drum Mixer	2023	BAGH	Baghouse
BURN*	110 MMBtu/hr heat input capacity, Dryer Burner firing recycled fuel oil (RFO)	2023	BAGH	Baghouse
SILO	Additive Silo	N/A	BAGH	Baghouse

*Proposed within current application

Emissions Summary

Facility-Wide Emissions (in tons per year)

Pollutant	Potential Emissions (Tons/year)	SM Limited Emissions (Tons/year)	Major Source Threshold Limits (Tons/year)
PM (filterable only)	27.5	4.2	100
PM ₁₀	7.68	11.7	100
PM _{2.5}	5.7	8.7	100
NO _x	108.4	16.5	100
CO	256.2	39	100
SO ₂	67.1	17.4	100
VOC	63.07	9.6	100
Total HAPs	19.71	3.0	25
Formaldehyde (Individual HAP)	6.1	0.93	10

In order to provide synthetic minor status, the following limits have been established:

- Total production of asphalt is limited to 600,000 tons during any twelve consecutive months.
- Fuel sulfur content to less than or equal to 1%.
- Fuel oil usage is limited to 800,000 gallons during any twelve consecutive months.

Sample emission calculations are shown below:

Sample emission calculation using the AP-42, Table 11.1-7 emission factor of 0.13 lb/ton for Waste oil-fired dryer. The maximum hourly production rate of 450 tons per hour, and the production limit of 600,000 tpy, CO emissions for the drum burner are:

Potential: $[450 \text{ ton/hr}] * [0.13 \text{ lb/ton}] * [8,760 \text{ hr/yr}] * [1 \text{ ton}/2,000 \text{ lb}] = 256.2 \text{ tpy}$

PBR Limited: $[600,000 \text{ tpy}] * [0.13 \text{ lb/ton}] * [1 \text{ ton}/2,000 \text{ lb}] = 39 \text{ tpy}$

Regulatory Applicability

40 CFR 60 Subpart I

Asphalt plants constructed after the NSPS compliance date of June 11, 1973, are subject to NSPS 40 CFR 60 Subpart I - Standards of Performance for Hot Mix Asphalt Facilities. Subpart I limit PM emissions from the dryer to 0.04 gr/dscf, and limits visible emissions to 20 percent opacity. This rule is applicable to the new asphalt plant.

Georgia Rule 391-3-1-.02(2)(b)

Georgia Rule (b) – Visible Emissions applies to all sources that are subject to at least one other emission limitation and are not subject to any other, more stringent, opacity standard. Georgia Rule (b) limits visible emissions to 40 percent opacity.

Georgia Rule 391-3-1-.02(2)(g)

Because asphalt plants burn fuel, they are subject to Georgia Rule (g) - Sulfur Dioxide. The rule limits plants with heat input capacities under 100 MMBtu/hour to 2.5 percent sulfur in the fuel and it limits plants with input heat capacity of 100 MMBtu/hr or more to 3.0 percent sulfur. The synthetic minor limit of 1.0 percent sulfur content is stricter than either, so only the SM limit is referenced in the permit.

Georgia Rule 391-3-1-.02(2)(k)

Georgia Rule (k) – Particulate Emission from Asphaltic Concrete Hot Mix Plants, which limits emissions of particulate matter, is an applicable rule. Most asphalt plants are subject to 40 CFR 60 Subpart I, because they were constructed after the NSPS compliance date of June 11, 1973. Since the PM and opacity limits in Subpart I are equal to or more stringent than those in Rule (k), no requirements for Georgia Rule (k) are included in the permit.

The facility claims that will have a hot oil heater with a 2 MMBtu/hr input capacity. Under the exemption list in Georgia Air Quality Rule 391-3-1-.03(6)(b)3, any fuel-burning equipment with a rated input capacity of 2.5 MMBtu/hr heat input capacity or less, is exempt from permitting. Therefore, the hot oil heater has not been included in this permit. However, it will be subject to Rule 391-3-1-.02(2)(d), which limits visible emissions and PM emissions, and Rule (g), which limits Sulfur Dioxide emissions.

Permit Conditions

The new C.W. Matthews Contracting Co., Inc. Plant #CWM62 permit contains all current conditions typical of asphalt plants of this design with synthetic minor status, which are subject to 40 CFR 60 Subpart I

Conditions 1.1 through 1.5 are standard conditions containing general requirements for SIP permits.

Condition 2.1 requires that the asphalt plant comply with NSPS Subpart I.

Condition 2.2 limits the sulfur content of fuel to 1.0 percent and the fuel usage to 8,00,000 gallons during any 12 consecutive month period.

Condition 2.3 limits production of asphalt for the plant to 600,000 tons for any 12 consecutive month period.

Condition 2.4 limits the fuel fired in the drum burner to on-spec used oil or recycled fuel oil (RFO). Firing of off-spec. fuel oil is prohibited.

Condition 2.5 specifies the requirements for on-spec oil fired in the drum burner and hot oil heater.

Condition 2.6 limits the opacity from any stack, unless otherwise limited to the Georgia Rule (b) 40 percent opacity limit

Condition 3.1 is a standard condition specifying the requirements for Georgia Rule (n) regarding fugitive dust. Fugitive emission opacities are limited to 20% by Georgia Rule (n)2.

Condition 4.1 is a standard condition requiring routine maintenance on air pollution control equipment.

Condition 4.2 contains the standard requirement that the company must keep extra bags on hand, so baghouse bags that fail can be replaced in a reasonable amount of time.

Condition 4.3 requires the facility to implement a Preventative Maintenance Program for the baghouses. This includes daily pressure drop readings and weekly checks on the baghouse and associated equipment for proper operation.

Condition 5.1 is a standard condition, requiring that monitoring systems be operated and kept in good repair.

Condition 5.2 requires the installation and operation of pressure drop indicators and temperature indicators on the dryer baghouse.

Condition 5.3 requires the facility to record the baghouse temperature daily.

Condition 5.4 requires the facility to verify the fuel oil sulfur content and analyze any used oil using the listed methods, if requested by the Division.

Condition 6.1 is a standard condition, providing information regarding testing requirements.

Condition 6.2 requires the facility to conduct initial and subsequent testing for particulate matter and visible emissions to demonstrate compliance with 40 CFR 60 Subpart I when fuel oil is fired in the dryer burner. Periodic testing for PM and opacity from the dryer baghouse is required every four years.

Condition 6.3 requires additional testing if production rates are increased above the tested rates during the latest performance tests.

Condition 7.1 requires the facility to notify the Division within 15 days of actual date that the hot mix asphalt plant becomes operational.

Condition 7.2 contains standard record keeping requirements for asphalt plants including asphalt production, fuel oil supplier certifications or analysis, verification of specification for recycled fuel oil and fuel usage.

Condition 7.3 contains standard recordkeeping requirements.

Condition 7.4 requires the Permittee to notify EPD in writing within 15 days if the limits in Condition 2.2 or 2.3 are exceeded or if off spec fuel oil is fired in the drum burner or in the hot oil heater.

Condition 8.1 is a standard condition allowing the Division to re-open the permit if it is determined that additional emissions control is necessary to ensure the safety of the public.

Condition 8.2 requires the payment of annual permit fees, in accordance with the Georgia Rules for Air Quality Control and the fee manual.

Condition 8.3 requires the facility to keep a copy of the permit and any future amendments onsite.

Condition 8.4 revokes the Air Quality Permit No. 2951-223-0025-S-02-0.

Condition 8.5 states that the Permittee shall not operate both the plants simultaneously. Existing plant shall cease operation after the start up of the new plant. A notification shall be provided to the Division.

Toxic Impact Assessment

A Toxic Impact Assessment was conducted using the SCREEN3 model and an emission rate of 0.027 g/s (0.93 tons/year). The results indicate that formaldehyde concentrations do not exceed the acceptable ambient concentrations (AAC), thus passing our Toxics Guideline.

$ACC_{15min} = 245 \mu g/m^3$	$MGCL_{15min} = 0.41 \mu g/m^3$	(0.2% of AAC_{15-min})
$ACC_{Annual} = 1.10 \mu g/m^3$	$MGCL_{Annual} = 0.02 \mu g/m^3$	(0.2% of AAC_{15-min})

Summary & Recommendations

I recommend issuing Permit No. 2951-223-0025-S-03-0 to C.W. Matthews Contracting Co., Inc. Plant #CWM62 for the construction and operation of a new asphalt plant to replace the existing plant. The plant will operate as a synthetic minor source with regard to Title V. It is assigned to Mountain District (Cartersville) for compliance responsibility. This permit also revokes existing Air Quality Permit No 2951-223-0025-S-02-0.