

Facility Name: **Thiele Kaolin Company - Deepstep Road Plant**

City: Sandersville

County: Washington

AIRS #: 04-13-303-00008

Application #: TV-874615

Date SIP Application Received:

Date Title V Application Received: October 31, 2024

Permit No: 3295-303-0008-V-06-1

<b>Program</b>	<b>Review Engineers</b>	<b>Review Managers</b>
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## Introduction

This narrative is being provided to assist the reader in understanding the content of the referenced SIP permit to construct and draft operating permit amendment. Complex issues and unusual items are explained in simpler terms and/or greater detail than is sometimes possible in the actual permit. This permit is being issued pursuant to: (1) Sections 391-3-1-.03(1) and 391-3-1-.03(10) of the Georgia Rules for Air Quality Control, (2) Part 70 of Chapter I of Title 40 of the Code of Federal Regulations, and (3) Title V of the Clean Air Act Amendments of 1990. The following narrative is designed to accompany the draft permit and is presented in the same general order as the permit. This narrative is intended only as an adjunct for the reviewer and has no legal standing. Any revisions made to the permit in response to comments received during the public comment period and EPA review process will be described in an addendum to this narrative.

**I. Facility Description**

A. Existing Permits

Table 1 below lists the current Title V permit, and all administrative amendments, minor and significant modifications to that permit, and 502(b)(10) attachments.

Table 1: Current Title V Permit and Amendments

Permit/Amendment Number	Date of Issuance	Description
3295-303-0008-V-06-0	January 6, 2024	TV Renewal

B. Regulatory Status

1. PSD/NSR/RACT

The facility is classified as a major stationary source as defined by the federal Prevention of Significant Air Quality Deterioration (PSD) regulation, 40 CFR 52.21. Specifically, it has the potential to emit more than 250 tons per year of particulate matter PM/PM10/PM2.5. The facility is PSD Synthetic Minor source for SO<sub>2</sub> emissions which are limited to less than 250 tons/year.

2. Title V Major Source Status by Pollutant

Table 2: Title V Major Source Status

Pollutant	Is the Pollutant Emitted?	If emitted, what is the facility's Title V status for the Pollutant?		
		Major Source Status	Major Source Requesting SM Status	Non-Major Source Status
PM	✓	✓		
PM <sub>10</sub>	✓	✓		
PM <sub>2.5</sub>	✓	✓		
SO <sub>2</sub>	✓	✓		
VOC	✓			✓
NO <sub>x</sub>	✓	✓		
CO	✓			✓
TRS				✓
H <sub>2</sub> S				✓
Individual HAP	✓			✓
Total HAPs	✓			✓

## II. Proposed Modification

### A. Description of Modification

The Plant is proposing to construct and operate a new No. 5 Boiler to replace the existing No. 5 Boiler which is no longer operable.

The new No. 5 Boiler will have a heat input capacity of 25.11 MMBtu/hr, which is lower than the existing No. 5 Boiler's heat input capacity of 29 MMBtu/hr.

The new No. 5 Boiler will be capable of burning natural gas with propane and distillate oil as backup.

The Permittee has requested that the new No. 5 Boiler and the existing No. 4 Boiler be restricted such that they would be permitted as meeting the definition of a gas-fired boiler in 40 CFR 63.11237. The definition of a gas-fired boiler is as follows:

*Gas-fired boiler includes any boiler that burns gaseous fuels not combined with any solid fuels and burns liquid fuel only during periods of gas curtailment, gas supply interruption, startups, or for periodic testing, maintenance, or operator training on liquid fuel. Periodic testing, maintenance, or operator training on liquid fuel shall not exceed a combined total of 48 hours during any calendar year.*

### B. Emissions Change

**Table 3: Emissions Change Due to Modification**

Pollutant	Is the Pollutant Emitted?	Net Actual Emissions Increase (Decrease) (tpy)	Net Potential Emissions Increase (Decrease) (tpy)
PM	✓	(<2.82)	(2.82)
PM <sub>10</sub>	✓	(<2.18)	(2.18)
PM <sub>2.5</sub>	✓	(<0.95)	(0.95)
SO <sub>2</sub>	✓	--	--
VOC	✓	(<0.19)	(0.19)
NO <sub>x</sub>	✓	(<3.30)	(3.30)
CO	✓	(<1.40)	(1.40)
TRS		--	--
H <sub>2</sub> S		--	--
Individual HAP	✓	(<0.03)	(0.03)
Total HAPs	✓	(<0.03)	(0.03)

### C. PSD/NSR Applicability

Not applicable since the emission increase from the replacement of Boiler No. 5 is less than emissions from the existing Boiler No. 5 that is being replaced. The potential emission of various pollutants from the new replacement boiler is less than the PSD significant emission rate for these pollutants.

**New Boiler No. 5 Potential Emissions**

<b>Pollutant</b>	<b>New Boiler No. 5 Potential Emissions (tpy)</b>	<b>PSD SER (tpy)</b>	<b>Above PSD SER? (Y/N)</b>
Filterable PM	0.32	25	N
Total PM <sub>10</sub>	0.90	15	N
Total PM <sub>2.5</sub>	0.86	10	N
NO <sub>x</sub>	15.65	40	N
SO <sub>2</sub>	3.31	40	N
CO	9.06	100	N
VOC	1.20	40	N
Total HAPs	0.20	N/A	N/A
GHG (CO <sub>2</sub> e) <sup>1</sup>	15,502	75,000	N/A

1. PSD can not be triggered for GHGs unless already triggered for another pollutant.

**III. Facility Wide Requirements****A. Emission and Operating Caps:**

Facility-wide SO<sub>2</sub> emissions are limited to less than 250 tons/year for PSD avoidance.

**B. Applicable Rules and Regulations**

Rules and Regulations Assessment – The Permittee has requested that going forward Boiler Nos. 4 and 5 will be classified as gas-fired boilers for the purposes of 40 CFR 63 Subpart JJJJJ applicability per 40 CFR 63.11237 of the area source Boiler MACT and will burn liquid fuel only during periods of gas curtailment, gas supply interruption, startups, or for periodic testing, maintenance, or operator training on liquid fuel. Periodic testing, maintenance, or operator training on liquid fuel shall not exceed a combined total of 48 hours during any calendar year. Gas-fired boilers are exempt from the requirements of 49 CFR 63 Subpart JJJJJ per 40 CFR 63.11195(e).

Emission and Operating Standards – Not applicable.

**C. Compliance Status**

Based on a review of the compliance status for the facility, the facility is in compliance with all applicable requirements in the permit.

## D. Permit Conditions

Condition 2.2.2 is deleted in this permit amendment since Boiler Nos. 4 and 5 will be classified as gas-fired boilers, which are exempt from the requirements of 40 CFR 63 Subpart JJJJJ, the area source boiler MACT.

## IV. Regulated Equipment Requirements

## A. Brief Process Description

There is no change to existing process description for the facility due to the boiler replacement.

## B. Equipment List for the Process

Emission Units		Applicable Requirements/Standards	Air Pollution Control Devices	
ID No.	Description		ID No.	Description
BL4	Boiler No. 4	391-3-1-.02(2)(d)	None	
BL5	Boiler No. 5	391-3-1-.02(2)(d) <b>40 CFR 60 Subpart Dc</b> <b>40 CFR 60 Subpart A</b>	None	
D1	Spray Dryer No. 1	291-3-1-.02(2)(b) 391-3-1-.02(2)(p) 40 CFR 64	D1C	Baghouse
D2	Spray Dryer No. 2	291-3-1-.02(2)(b) 391-3-1-.02(2)(p) 40 CFR 64	D2C	Baghouse
D3	Spray Dryer No. 3	291-3-1-.02(2)(b) 391-3-1-.02(2)(p) 40 CFR 64	D3C	Baghouse
D4	Spray Dryer No. 4	291-3-1-.02(2)(b) 391-3-1-.02(2)(p) 40 CFR 64	D4C	Baghouse
D5	Apron Dryer	391-3-1-.02(2)(b) 391-3-1-.02(2)(p)	None	
F1	Spray Dryer No. 1 Bulk Railcar Loading	391-3-1-.02(2)(b) 391-3-1-.02(2)(p) 40 CFR 64	F1C	Baghouse
F2	Spray Dryer No. 2 Bulk Railcar Loading	391-3-1-.02(2)(b) 391-3-1-.02(2)(p) 40 CFR 64	F2C	Baghouse
F3	Spray Dryer No. 3 Bulk Railcar Loading	391-3-1-.02(2)(b) 391-3-1-.02(2)(p) 40 CFR 64	F3C	Baghouse
F4	Spray Dryer No. 4 Bulk Railcar Loading	391-3-1-.02(2)(b) 391-3-1-.02(2)(p) 40 CFR 64	F4C	Baghouse
F4B	Spray Dryer No. 4 Bagging Machine	391-3-1-.02(2)(b) 391-3-1-.02(2)(p) 40 CFR 64	F4C	Baghouse
F5	Apron Dryer Bulk Railcar Loading	40 CFR 60 Subpart OOO 391-3-1-.02(2)(b) 391-3-1-.02(2)(p)	F5C	Baghouse

Emission Units		Applicable Requirements/Standards	Air Pollution Control Devices	
ID No.	Description		ID No.	Description
F5B	Apron Dryer Big (IBC) Bagger	40 CFR 60 Subpart OOO 391-3-1-.02(2)(b) 391-3-1-.02(2)(p)	F5C	Baghouse
F4D	Spray Dryer No. 4 Bulk Bagger	40 CFR 60 Subpart OOO 391-3-1-.02(2)(b) 391-3-1-.02(2)(p)	F4C	Baghouse
S1	Soda Ash Make-down Tank	391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	S1C	Scrubber

Note: Boiler Nos. 4 and 5 are gas-fired boilers and are exempt from 40 CFR 63 Subpart JJJJJ.

### C. Equipment & Rule Applicability

#### Emission and Operating Caps –

No change to existing emission and operating caps.

#### Applicable Rules and Regulations –

The Permittee has requested that Boiler Nos. 4 and 5 will be classified as gas-fired for the purpose of the area source boiler MACT 40 CFR 63 Subpart JJJJJ. The boilers will fire liquid fuel only during periods of gas curtailment, gas supply interruption, startups, or for periodic testing, maintenance, or operator training on liquid fuel. Periodic testing, maintenance, or operator training on liquid fuel shall not exceed a combined total of 48 hours during any calendar year for each boiler per 40 CFR 63.11237. Gas-fired boilers are exempt from requirements of 40 CFR 63 Subpart JJJJJ (the area source boiler MACT) per 63.11195(e). Boiler No. 5 New Boiler No. 5 has a heat input capacity of 25.11 MMBtu/hr, it will be capable of burning natural gas with propane and distillate fuel oil as backup. Therefore, NSPS Subpart Dc applies to new Boiler No. 5. Subpart Dc requirements for gas-fired boilers are very minimal. Following are the 40 CFR 60 Subpart Dc requirements for the new Boiler No. 5

- ▶ 40 CFR 60.42c(d) limits the sulfur content of the fuel oil to 0.5 percent.
- ▶ 40 CFR 60.42c(h)(1) states that compliance with the fuel oil sulfur limit may be determined based on a certification from the fuel supplier.
- ▶ 40 CFR 60.44c(h) states that, for sources demonstrating compliance with the SO<sub>2</sub> standards based on fuel supplier certification, the performance test shall consist of the certification from the fuel supplier.
- ▶ 40 CFR 60.48c(a) requires notification of the date of construction and actual startup.
- ▶ 40 CFR 60.48c(e)(11) requires fuel oil sulfur reports to include a certified statement signed by the owner or operator of the affected facility that the records of fuel supplier certifications submitted represent all of the fuel combusted during the reporting period.
- ▶ 40 CFR 60.48c(f)(1) specifies the content for the fuel oil supplier certification.
- ▶ 40 CFR 60.48c(g)(2) requires monthly records for each fuel combusted.
- ▶ 40 CFR 60.48c(j) requires semiannual reports to be submitted (to be included with other facility semiannual reporting requirements).

#### D. Permit Conditions.

Existing Condition 3.2.2 was amended adding fuel burning equipment to the permit language and by adding the definition of distillate fuel oil and 40 CFR 60 Subpart Dc citation.

Existing Condition 3.3.2 requiring the facility to comply with the requirements of 40 CFR 63 Subpart JJJJJ, the area source boiler MACT was deleted in this permit amendment since Boiler Nos. 4 and 5 will meet the definition of gas-fired boilers in the area source boiler MACT 40 CFR 63 Subpart JJJJJ per 40 CFR 63.11237 and gas-fired boilers are exempt from the area source boiler MACT 40 CFR 63 Subpart JJJJJ per 40 CFR 63.11195(e) and was replaced with Boiler No. 5 to comply with all applicable requirements of the boiler NSPS 40 CFR 60 Subpart Dc.

Existing Condition 3.3.3 is amended by adding the requirements for avoidance of the area source boiler MACT 40 CFR 63 Subpart JJJJJ for Boilers Nos. 4 and 5 per 40 CFR 63.11195(e) by meeting the requirements to be classified as a gas-fired boilers per 40 CFR 63.11237.

Existing Condition 3.3.4 is also deleted in this permit amendment since it is an area source boiler MACT condition and Boiler Nos. 4 and 5 will be exempt from 40 CFR 63 Subpart JJJJJ since they will be classified as gas-fired boilers per 40 CFR 63.11237.

Existing Condition 3.4.2 is amended by adding the boiler NSPS citation to the opacity limit for Boiler No. 5.

#### V. Testing Requirements

New Condition 4.2.3 states that the fuel supplier certification for fuel sulfur content meets the requirements for performance tests for Boiler No. 5 per the boiler NSPS.

#### VI. Monitoring Requirements (with Associated Record Keeping and Reporting)

Existing Condition 5.2.7 is amended by adding that fuel sulfur content may also be verified by fuel oil analysis conducted by EPD approved methods of sampling and analysis and by adding the boiler NSPS citation.

Existing Condition 5.2.11 which contains monitoring requirements of the area source boiler MACT 40 CFR 63 Subpart JJJJJ is deleted in this permit amendment since it is an area source boiler MACT condition and Boiler Nos. 4 and 5 will be exempt from 40 CFR 63 Subpart JJJJJ since they will be classified as gas-fired boilers per 40 CFR 63.11237 and is replaced by fuel usage monitoring requirements of boiler NSPS 40 CFR 60 Subpart Dc.

#### VII. Other Record Keeping and Reporting Requirements

Existing Condition 6.1.1 is amended by adding citation of the boiler NSPS for recordkeeping requirements for the new boiler No. 5.

Area source boiler MACT 40 CFR 63 Subpart JJJJJ conditions 6.2.5, 6.2.6 and 6.2.7 are deleted in this permit amendment since they are area source boiler MACT conditions and Boiler Nos. 4 and 5 will be exempt from 40 CFR 63 Subpart JJJJJ since they will be classified as gas-fired boilers per 40 CFR 63.11237. These conditions are replaced by the boiler NSPS recordkeeping and reporting requirements.

Condition 6.2.5 is the boiler NSPS recordkeeping requirements for fuel oil fired in Boiler No. 5.

Condition 6.2.6 is the semi-annual boiler NSPS reporting requirement for fuel oil fired in Boiler No. 5.

Condition 6.2.7 is the initial startup notification for Boiler No. 5 per the boiler NSPS.

### **VIII. Specific Requirements**

Discuss any of the following specific requirements as they apply to the modification.

No additional requirements apply to the modification.

**Addendum to Narrative**

The 30-day public review started on month day, year and ended on month day, year. Comments were/were not received by the Division.

//If comments were received, state the commenter, the date the comments were received in the above paragraph. All explanations of any changes should be addressed below.//