Facility Name: **General Shale Brick, Inc.-Plant 40**
City: Coosa
County: Floyd County
AIRS #: 04-13-11500105

Application #: TV-573102
Date Application Received: June 29, 2021
Permit No: 3251-115-0105-V-05-0

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Introduction

This narrative is being provided to assist the reader in understanding the content of referenced operating permit. Complex issues and unusual items are explained here in simpler terms and/or greater detail than is sometimes possible in the actual permit. The permit is being issued pursuant to: (1) Georgia Air Quality Act, O.C.G.A § 12-9-1, et seq. and (2) Georgia Rules for Air Quality Control, Chapter 391-3-1, and (3) Title V of the Clean Air Act. Section 391-3-1-.03(10) of the Georgia Rules for Air Quality Control incorporates requirements of Part 70 of Title 40 of the Code of Federal Regulations promulgated pursuant to the Federal Clean Air Act. The narrative is intended as an adjunct for the reviewer and to provide information only. It has no legal standing. Any revisions made to the permit in response to comments received during the public participation and EPA review process will be described in an addendum to this narrative.

I. Facility Description

A. Facility Identification

1. Facility Name:General Shale Brick, Inc.-Plant 40

2. Parent/Holding Company Name: Wienerberger Group

3. Previous and/or Other Name(s): None

4. Facility Location

121 Turners Bend Road
Coosa, Georgia (Floyd County)

5. Attainment, Non-attainment Area Location, or Contributing Area

The facility is not located in an attainment area.

B. Site Determination

There are no other facilities which could possibly be contiguous or adjacent and under common control.

C. Existing Permits

Table 1 below lists all current Title V permits, all amendments, 502(b)(10) changes, and off-permit changes, issued to the facility, Current Permits, of the Title V application and the "Permit" file(s) on the facility found in the Air Branch office.

Table 1: List of Current Permits, Amendments, and Off-Permit Changes

Permit Number and/or Off-Permit Change	Date of Issuance/ Effectiveness	Purpose of Issuance
3251-115-0105-V-04-0	January 26, 2017	Title V Permit

D. Process Description

1. SIC Codes(s): 3251

The SIC Code(s) identified above were assigned by EPD's Air Protection Branch for purposes pursuant to the Georgia Air Quality Act and related administrative purposes only and are not intended to be used for any other purpose. Assignment of SIC Codes by EPD's Air Protection Branch for these purposes does not prohibit the facility from using these or different SIC Codes for other regulatory and non-regulatory purposes.

Should the reference(s) to SIC Code(s) in any narratives or narrative addendum previously issued for the Title V permit for this facility conflict with the revised language herein, the language herein shall

control; provided, however, language in previously issued narratives that does not expressly reference SIC Code(s) shall not be affected.

2. Description of Product(s)

The facility manufactures clay bricks.

3. Overall Facility Process Description

Grinding Room (GR1)
Raw material (clay/shale) is trucked to the site and stockpiled near the Grinding Room (Emission Unit ID No. GR). When needed, a front-end loader transfers raw material from the stockpile into a hopper at the front of the Grinding Room. Material is ground and screened by the Grinder, Hammer mill and screens. Dust is controlled by the inherent moisture content of the raw material and the total enclosure of the grinding room equipment within a four-sided building.

Coal System (CS1)
The primary fuels are natural gas or coal supplemented by natural gas. The goal of the plant is to burn 100% natural gas. However, the flexibility to burn coal with supplemental natural gas must be retained as an option in the event natural gas would become scarce or hard to acquire. When burning coal, supplemental natural gas is needed to maintain temperatures in the Kilns high enough to ensure complete coal combustion. The bulk of coal used is stored on a concrete pad. When needed, coal is transferred via front-end loader to a covered storage area and fed into a hopper. Coal is then conveyed into the Coal System (Emission Unit ID No. CS1) where it is ground into a fine material. A baghouse controls air emissions from this system with any captured coal dust being fed back into the Kilns. This baghouse exhausts to the outside atmosphere.

Mill Room (MR1)
The raw material which has been ground and screened is transferred into the Mill Room (Emission Unit ID No. MR1), where additives are introduced into the material along with water. This material is then extruded through a brick machine into a column of brick. Sand from a storage silo is applied if needed, to the outside of the column of brick and conveyed to a wire cutter. The column is then cut into individual "green" brick. Robots stack the individual "green" brick onto kiln cars for drying. The mill room is totally enclosed within a building, and the baghouse exhausts to the outside atmosphere. This baghouse exists primarily for health and safety purposes, and the material captured by the baghouse is recycled back into the raw material and is made into brick.

Kilns KE1 & KE2
The "Green" bricks from the Mill Room are stacked on kiln cars and placed in the Pre-dryer section of the kiln where the moisture content of the green brick is lowered slightly. From the Pre-dryer, the kiln cars are moved to the Dryer section of the kiln for further moisture removal. The Pre-dryer is heated with hot air from the cooling section of the kiln. Dried bricks are moved from the Dryer to the Tunnel Kiln 1 or kiln 2 (Emission Unit ID No. KE1 or KE2) Airflow in this portion of the kiln (preheat) is in the opposite direction of the kiln car movement until the end of the firing zone. The kiln exhaust, which is eventually fed into a scrubber, is in the preheat area of the kiln. Kiln temperatures slowly rise as the kiln cars approach the firing zone and transfer pulverized coal into the kiln where the coal ignites nearly instantaneously. Temperatures can rise as high as 2,000

degrees Fahrenheit. Following the combustion zone, running clean ambient air over the brick slowly cools the brick. As mentioned earlier, this air is eventually recycled into the predryer and dryer sections of the kiln. In addition, airflow in the cooling zone is now in the direction of the kiln car movement. After the finished product is allowed to cool, it is stored for resale.

Sand Storage Silo (SD1)
Sand is stored in the silo (Emission Unit ID No. SD1). The only air emissions that occur from this silo are during filling operations.

4. Overall Process Flow Diagram

The facility provided a process flow diagram in their Title V permit application.

E. Regulatory Status

1. PSD/NSR

PSD/NSR - Floyd County is attainment for particulate matter less than 2.5 microns (PM2.5). The facility is not subject to PSD/NSR review. The permit has limits to ensure the facility is not a major source as defined in the 40 CFR Part 52.21 *Prevention of Significant Deterioration* (PSD). General Shale Brick, Inc. – Plant 40 is in attainment for all National Ambient Air Quality Standards (NAAQS). Therefore, non-attainment portion of New Source Review (NSR) contained in the 40 CFR Part 52 does not apply.

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
$PM_{2.5}$	✓			✓
SO_2	✓	✓		
VOC	✓			✓
NO_x	✓			✓
CO	✓	✓		
TRS	✓		n/a	
H_2S	✓		n/a	
Individual HAP	✓		✓	
Total HAPs	✓		✓	
Total GHGs	✓			✓

3. MACT Standards

The source is major for HAPs and was subject to the Brick and Structural Clay Products MACT or BSCP MACT (40 CFR 63 Subpart JJJJJ). As the United Stated Court of Appeals for the District of Columbia vacated the BSCP MACT on June 18, 2007, however, the facility agreed to maintain their current BSCP MACT compliance. Therefore, current permit was issued with MACT compliance conditions included under Georgia Rules.

Now the facility wants to avoid BSCP MACT and thus requested for a minor source status for HAPs emissions.

Note that, this Brick MACT will not be applicable now to the facility because potential HAP emissions are limited to be less than 10/25 tpy by limiting the production of bricks to 328000 tons per year. Therefore, being a minor source for HAPs emissions, this permit renewal does not include conditions for BSCP MACT compliance which was earlier included in the current permit. Note that production is already limited by the current permit to avoid PSD with regards to SO_2 emissions.

4. Program Applicability (AIRS Program Codes)

Program Code	Applicable (y/n)
Program Code 6 - PSD	No
Program Code 8 – Part 61 NESHAP	No
Program Code 9 - NSPS	Yes
Program Code M – Part 63 NESHAP	Yes
Program Code V – Title V	Yes

Regulatory Analysis

II. Facility Wide Requirements

A. Emission and Operating Caps:

The two kilns at the facility are the significant sources of HAPs emissions. The existing plant potential to emit (PTE), HAPs emissions are than greater than 10/25 tpy, major source threshold limits. Since all significant emission sources, kilns, are to be routed through the control system consisting of Dustex Dry Scrubber and Baghouse, which limits the HAPs emissions from both the kilns will effectively limit HAP emissions facility wide. The facility has requested to take 10/25 tpy limits on HAPs emissions. The facility will be a minor source for HAPs, and hence the facility will not be subjected to 40 CFR 63 Subpart JJJJJ-National Emission Standards for Hazardous Air Pollutants for Brick and Structural Clay Products Manufacturing (BSCP) MACT. The following Condition 2.2.2 is carried over into this permit renewal for this purpose:

2.2.2 The Permittee shall not cause, let, suffer, permit or allow the rate of emissions from the entire facility any gases, which contain individual and total hazardous air pollutants (HAPs), in amounts in excess of 10 tpy and 25 tpy respectively during any twelve (12) consecutive months.
[MACT and 112(g) Avoidance Limit, 391-3-1-.02(2)(a)3]

B. Applicable Rules and Regulations

Not applicable.

C. Compliance Status

The facility is operating in compliance with all the rules or regulations described above.

D. Permit Conditions

Condition No. 2.2.1 requires the Permittee to comply with general provisions of 40 CFR 60 and is the same as existing condition.

Condition No. 2.2.2 requires the Permittee to limit HAPs emissions to ensure a minor source status for HAPs, to avoid BSCP MACT.

III. Regulated Equipment Requirements

A. Equipment List for the Process

Emission Units		Specific Limitations/Requirements	Air Pollution Control Devices	
ID No.	**Description**	**Applicable Requirements/Standards**	**ID No.**	**Description**
KE1	Kiln 1 (Tunnel kiln, Capacity 20.3 ton/hr)	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(g)	KS1	Dustex Dry Scrubber and Baghouse
KE2	Kiln 2 (Tunnel kiln, Capacity 20.3 ton/hr)	391-3-1-.02(2)(b) 391-3-1-.02(2)(e) 391-3-1-.02(2)(g)	KS2	Dustex Dry Scrubber and Baghouse
CS1	Coal System	391-3-1-.02(2)(e) 391-3-1-.02(2)(b) 391-3-1-.02(2)(n)	CB1	Coal Handling Baghouse
SD1	Sand Storage Silo	391-3-1-.02(2)(e) 391-3-1-.02(2)(b)	SB1	Silo Bin Vent
MR1	Millroom	391-3-1-.02(2)(e) 40 CFR 60 Subpart OOO	MB1	Millroom Baghouse
Grinding Room (GR1)				
GR1	Stedman Grand Slam, Hammermill	391-3-1-.02(2)(e) 40 CFR 60 Subpart OOO	N/a	None
GR1	(2) Scalping Screens 5x10 Triple Deck Midwestern	391-3-1-.02(2)(e) 40 CFR 60 Subpart OOO	N/a	None
GR1	Finish Screens 5x10 Double Deck Midwestern,	391-3-1-.02(2)(e) 40 CFR 60Subpart OOO	N/a	None
GR1	Conveyor from hopper to Stedman	391-3-1-.02(2)(e) 40 CFR 60 Subpart OOO	N/a	None
GR1	30" Screen Feed Conveyor	391-3-1-.02(2)(e) 40 CFR 60 Subpart OOO	N/a	None
GR1	24" Tailings Conveyor	391-3-1-.02(2)(e) 40 CFR 60 Subpart OOO	N/a	None
GR1	24" Hammermill Feed Conveyor	391-3-1-.02(2)(e) 40 CFR 60 subpart OOO	N/a	None
GR1	24" Product Conveyor	391-3-1-.02(2)(e) 40 CFR 60 Subpart OOO	N/a	None
GR1	Trampolin Conveyor	391-3-1-.02(2)(e) 40 CFR 60 Subpart OOO	N/a	None
GR1	Stedman Grand Slam, Hammermill	391-3-1-.02(2)(e) 40 CFR 60 Subpart OOO	N/a	None
GR1	(2) Scalping Screens 5x10 Triple Deck Midwestern	391-3-1-.02(2)(e) 40 CFR 60 Subpart OOO	N/a	None
GR1	Six conveyors	391-3-1-.02(2)(e) 40 CFR 60 Subpart OOO	N/a	None

* Generally applicable requirements contained in this permit may also apply to emission units listed above. The lists of applicable requirements/standards and corresponding permit conditions are intended as a compliance tool and may not be definitive.

B. Equipment & Rule Applicability

Georgia Rule 391-3-1-.02(2)(e), "Particulate Emissions from Manufacturing Processes" limits the PM emissions from process units based on their construction date and process weight input rate. The affected sources at this facility are in compliance with the applicable PM emissions either they are inherently emitting little PM emissions due to the nature of the processes or are controlled by PM control devices such as dry scrubbers/baghouses.

Under Georgia Rule(e) General Shale Brick, Inc. – Plant 40 will not cause, let, permit, suffer, or allow particulate emissions from Tunnel Kiln 1 (Emission Unit ID No. KE1) and Tunnel Kiln 2 (Emission Unit ID No. KE2) in total quantities equal to or exceeding the allowable rates specified in the equation below:

$E = 4.1P^{0.67}$; for process input weight rate up to and including 30 tons per hour.

Where; E = emission rate in pounds per hour
P = process input weight rate in tons per hour

Georgia Rule 391-3-1-.02(2)(b), "Visible Emissions" applies to all point sources at this facility except those subject to other more restrictive or specific rules. Rule (b) limits the visible emissions to no greater than 40% opacity. The affected sources at this facility are in compliance with this visible emission limit either they are inherently emitting little visible emissions due to the nature of the processes or are controlled by PM control devices such as dry scrubbers/baghouses.

The Millroom (MR), Coal System (CS), and Sand Silo (SD) are all subject to Georgia Rule (e). The Millroom (MR) equipment consists of the following: Stedman Grand Slam, Hammermill, (2) Scalping Screens 5x10 Triple Deck Midwestern, Finish Screens 5x10 Double Deck Midwestern, Conveyor from hopper to Stedman, 30" Screen Feed Conveyor, 24" Tailings Conveyor, 24" Hammermill Feed Conveyor, 24" Product Conveyor, Trampolin Conveyor. All of the Millroom equipment is enclosed within a building. Hammermill, (2) Scalping Screens 5x10 Triple Deck Midwestern, Finish Screens 5x10 Double Deck Midwestern, Conveyor from hopper to Stedman, 30" Screen Feed Conveyor, 24" Tailings Conveyor, 24" Hammermill Feed Conveyor, 24" Product Conveyor, Trampolin Conveyor are subject to the NSPS for Non-Metallic Mineral Processing Plants (40 CFR 60 Subpart OOO. However, the particulate matter emissions standard of Subpart OOO does not apply to any of the previously mentioned equipment because the emissions are not vented from a stack. These units with Subpart OOO PM limits are part of the process that includes other emission units subject to Rule (e) and would therefore need to be included with any Rule (e) compliance determination.

Conveyors, bins, bucket elevators, screens, crushers, and mills associated with mineral processing facilities constructed after August 31, 1983, are subject to 40 CFR Part 60, Subpart OOO, "Standards of Performance for Nonmetallic Mineral Processing Plants."

Georgia Rule 391-3-1-.02(2)(d), "Fuel Burning Equipment" limits the PM and visible emissions from any fuel-burning equipment in operation or under construction at the facility. However, Rule (d) is not applicable to the kilns and dryers as they are direct-fired process units and do not meet the definition of fuel-burning equipment under 391-3-1-.01(cc).

Per Georgia Rule 391-3-1-.02(2)(g)2 "Sulfur Dioxide," all fuel burning sources below 100 million BTUs of heat input per hour shall not burn fuel containing more than 2.5 percent sulfur, by weight. All fuel burning sources having a heat input of 100 million BTUs per hour or greater shall not burn a fuel containing more than 3 percent sulfur, by weight. Since this facility has sulfur content and SO_2 limits to avoid PSD, rule (g) is not included in this permit renewal. Compliance will be inherent based on these limits. Condition 3.2.4 limits the sulfur limit, to avoid PSD provisions, SO_2 to 239 tons per year. This limit allowed the facility operational flexibility and preserves the PSD avoidance limit.

Georgia Rule 391-3-1-.02(2)(n), "Fugitive Emissions" requires that all persons responsible for any operation, process, handling, transportation, or storage facility which may result in fugitive dust shall take all reasonable precautions to prevent such dust from becoming air borne. In addition, Rule (n) limits the opacity of any fugitive emissions to less than 20%. The facility complies with this rule through the use of paved lots and dust suppression equipment if/when necessary.

Emission and Operating Caps:

The brick production is limited to 328, 500 tons per year (Condition 3.2.1) and SO_2 emissions to less than 239 tpy from kilns 1 and 2 (Condition 3.2.3) to avoid 40 CFR 52.21and avoidance of 40 CFR 64 as explained above. Also, this production limit will be a surrogate to ensure that the individual and total HAPs are less than 10/25 tpy limit for a major source.

Rules and Regulations Assessment:

General Shale Brick, Inc. requested, through the previous renewal to limit the facility-wide emissions of single HAP and total HAPs combined to less than 10 tons and 25 tons per year, and therefore becoming a HAP minor source under NESHAP Part 63 rules. Since becoming a HAP minor source the kilns no longer are subject to the BSCP MACT. The facility is still required to demonstrate it is a HAP minor source.

The information submitted by the facility indicate at production limit of 328000 tpy brick manufacturing, the individual and total HAPs are less than 10/25 limit. The actual emission calculation indicates the individual HAPs i.e HF and HCl are less than 0.5 tpy each and total HAPs much less than 25 tpy. These calculations are based on the results of performance tests conducted on kiln 1 and kiln 2 as required by current permit Condition No. 4.1.1

C. Permit Conditions

Process specific permit conditions included in Part 3.0 of the Title V permit, are summarized below:

Condition 3.2.1 pertains to the production limit for PSD avoidance, and it ensures the facility is a minor source for HAPs.

Condition 3.2.2 requires the Permittee to burn only natural gas and to limit the sulfur content when coal is used during periods of gas supply emergencies.

Condition No. 3.2.3 is for the SO_2 emission limit provides more flexibility to the facility.

Condition 3.3.1 incorporates applicable emission and operating requirements under NSPS Subpart OOO for the operation of equipment under group "Grinding Room (GR)."

Conditions 3.4.1 and 3.4.2 require the facility to comply with the emission limits in these conditions by using PM emission control devices such as scrubber/baghouse.

Condition 3.4.3 Division for Rule (n). This condition regulates all the production processes and/or activities with fugitive emissions and contains detailed requirements for preventing and reducing fugitive emissions.

Conditions 3.5.1 and 3.5.2 are carried over from the previous permit. Condition 3.5.3 pertains to the maintenance to be performed on control devices.

IV. Testing Requirements (with Associated Record Keeping and Reporting)

A. General Testing Requirements

The permit includes a requirement that the Permittee conduct performance testing on any specified emission unit when directed by the Division. Additionally, a written notification of any performance test(s) is required 30 days (or sixty (60) days for tests required by 40 CFR Part 63) prior to the date of the test(s) and a test plan is required to be submitted with the test notification. Test methods and procedures for determining compliance with applicable emission limitations are listed and test results are required to be submitted to the Division within 60 days of completion of the testing.

B. Specific Testing Requirements

Condition No. 4.2.1 to reflect testing requirements for Kiln KE1 and kiln KE2. Kilns are to be tested to derive an emission factor for HF, HCl, and SO_2, to be used in demonstrating compliance with the HAPs and SO_2 emission limits in Conditions 2.2.2 and 3.2.3. Subsequent testing is to be conducted as needed based on this condition. New emission factors are required if a different fuel is fired. The Permittee must conduct additional performance tests when changing scrubber reagents and/or feed rate.

V. Monitoring Requirements

A. General Monitoring Requirements

Condition 5.1.1 requires all continuous monitoring systems required by the Division be operated continuously except during monitoring system breakdowns and repairs. Monitoring system response during quality assurance activities is required to be measured and recorded. Maintenance or repair is required to be conducted in an expeditious manner.

B. Specific Monitoring Requirements

Conditions No. 5.2.1 through 5.2.5, related to specific monitoring requirements of control systems, are carried over from the Permit No. 3251-115-0105-V-04-0.

C. Compliance Assurance Monitoring (CAM)

CAM is applicable to emission units that are subject to an emissions standard, use a control device to achieve compliance with the standard, and have potential uncontrolled emissions greater than or equal to the major source threshold. The Kilns KE1 and KE2 are subject to CAM because emissions of SO_2, HF, and HCl are above the major source thresholds.

Conditions 5.2.6 and 5.2.7 containing the CAM requirements are carried over in this renewal. Condition 5.2.6 lists the emission units subject to CAM. The two kilns KE1 and KE2 are subject because potential emissions of SO_2, HF, and HCl are over the specified thresholds. Condition 5.2.7 lists the performance criteria and parameters to be monitored for each pollutant.

VI. Record Keeping and Reporting Requirements

A. General Record Keeping and Reporting Requirements

The Permit contains general requirements for the maintenance of all records for a period of five years following the date of entry and requires the prompt reporting of all information related to deviations from the applicable requirements. Records, including identification of any excess emissions, exceedances, or excursions from the applicable monitoring triggers, the cause of such occurrence, and the corrective action taken, are required to be kept by the Permittee and reporting is required on a semiannual basis.

B. Specific Record Keeping and Reporting Requirements

Condition 6.1.7 b. has been carried over from Permit No. 3251-115-0105-V-04-0, and it states a production limit for sulfur content, SO2, and HAPs emission exceedances.

Conditions No. 6.2.1 through 6.2.9 have been carried over from Permit No. 3251-115-0105-V-04-0. These conditions are described below:

Condition 6.2.1 requires the Permittee to maintain records for action taken to suppress fugitive dust.

Condition 6.2.2 requires the Permittee to maintain records for shipment of coal received.

Condition 6.2.3 requires the Permittee to maintain records for monthly fired products and operating hours for each kiln. This condition is modified to notify if the production rate is exceeded the limit.

Condition 6.2.4 requires the Permittee to comply with detailed notification, reporting, and recordkeeping requirements of 40 CFR Part 60 Subpart OOO, *Standards of Performance for Nonmetallic Mineral Processing Plants.* This condition is same as existing permit condition.

Condition 6.2.5 requires the Permittee to keep records for reagents used to operate the Dustex scrubber.

Condition 6.2.6 requires the Permittee to calculate monthly SO_2 emissions from kilns.

Condition 6.2.7 requires the Permittee to calculate SO_2 twelve consecutive month totals and notify if total exceeds 239 tpy.

Condition 6.2.8, which requires the Permittee to calculate new emission factors at least every five years to demonstrate HAPs limits, for continuous compliance.

Condition 6.2.9, which requires the Permittee to notify the Division in advance before switching to coal burning, is added.

VII. Specific Requirements

A. Operational Flexibility - None.

B. Alternative Requirements - None.

C. Insignificant Activities – See Appendix.

D. Temporary Sources - None.

E. Short-Term Activities - None.

F. Compliance Schedule/Progress Reports – Not applicable.

G. Emissions Trading - Not applicable.

H. Acid Rain Requirements - Not applicable.

I. Stratospheric Ozone Protection Requirements - Not applicable.

J. Pollution Prevention - None.

K. Specific Conditions - None.

VIII. General Provisions

Generic provisions have been included in this permit to address the requirements in 40 CFR Part 70 that apply to all Title V sources, and the requirements in Chapter 391-3-1 of the Georgia Rules for Air Quality Control that apply to all stationary sources of air pollution.

Template Condition 8.14.1 was updated in September 2011 to change the default submittal deadline for Annual Compliance Certifications to February 28.

Template Condition Section 8.27 was updated in August 2014 to include more detailed, clear requirements for emergency generator engines currently exempt from SIP permitting and considered insignificant sources in the Title V permit.

Template Condition Section 8.28 was updated in August 2014 to more clearly define the applicability of the Boiler MACT or GACT for major or minor sources of HAP.

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.//