STATE OF MISSISSIPPI
AIR POLLUTION CONTROL PERMIT

AND PREVENTION OF SIGNIFICANT DETERIORATION (PSD) AUTHORITY

TO CONSTRUCT AIR EMISSIONS EQUIPMENT

THIS CERTIFIES THAT

Mississippi Silicon, LLC – Burnsville Silicon Manufacturing Plant
80 County Road 210
Burnsville, Tishomingo County, Mississippi

has been granted permission to construct air emissions equipment to comply with the emission limitations, monitoring requirements and other conditions set forth herein. This permit is issued in accordance with the provisions of the Mississippi Air and Water Pollution Control Law (Section 49-17-1 et. seq., Mississippi Code of 1972), and the regulations and standards adopted and promulgated thereunder and under authority granted by the Environmental Protection Agency under 40 CFR 52.01 and 52.21.

MISSISSIPPI ENVIRONMENTAL QUALITY PERMIT BOARD

Krystal Rudolph

AUTHORIZED SIGNATURE
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

Issued: November 27, 2013 **Permit No.: 2640-00060**

Revised: June 20, 2022

64456 PER20180001

SECTION 1. GENERAL CONDITIONS

1.1 This permit is for air pollution control purposes only.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.1.D.)

1.2 Any activities not identified in the application are not authorized by this permit.

(Ref.: Miss. Code Ann. 49-17-29(1)(b))

1.3 The knowing submittal of a permit application with false information may serve as the basis for the Permit Board to void the permit issued pursuant thereto or subject the applicant to penalties for operating without a valid permit pursuant to State Law.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B(5).)

1.4 It is the responsibility of the applicant/permittee to obtain all other approvals, permits, clearances, easements, agreements, etc., which may be required including (but not limited to) all required local government zoning approvals or permits.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.1.D(6).)

1.5 The issuance of a permit does not release the permittee from liability for constructing or operating air emissions equipment in violation of any applicable statute, rule, or regulation of state or federal environmental authorities.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B(7).)

1.6 It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit, unless halting or reducing activity would create an imminent and substantial endangerment threatening the public health and safety of the lives and property of the people of this state.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B(15)(a).)

1.7 The permit and/or any part thereof may be modified, revoked, reopened, and reissued, or terminated for cause. Sufficient cause for a permit to be reopened shall exist when an air emissions stationary source becomes subject to Title V. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B(15)(b).)

1.8 The permit does not convey any property rights of any sort, or any exclusive privilege.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B(15)(c).)

1.9 The permittee shall furnish to the Mississippi Department of Environmental Quality (MDEQ) within a reasonable time any information the MDEQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the MDEQ copies of records required to be kept by the permit or, for information claimed to be confidential, the permittee shall furnish such records to the MDEQ along with a claim of confidentiality. The permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B(15)(d).)

1.10 *Design and Construction Requirements*: The stationary source shall be designed and constructed so as to operate without causing a violation of any Applicable Rules and Regulations, without interfering with the attainment and maintenance of State and National Ambient Air Quality Standards, and such that the emission of air toxics does not result in an ambient concentration sufficient to adversely affect human health and well-being or unreasonably and adversely affect plant or animal life beyond the stationary source boundaries.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.5.A(1)-(3).)

1.11 The necessary facilities shall be constructed to prevent any wastes or other products or substances to be placed in a location where they are likely to cause pollution of the air or waters of the State without the proper environmental permits.

(Ref.: Miss. Code Ann. 49-17-29(1) and (2))

1.12 *Fugitive Dust Emissions from Construction Activities*: The construction of the stationary source shall be performed in such a manner so as to reduce fugitive dust emissions from construction activities to a minimum.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.5.A(4).)

1.13 *General Nuisances*: The permittee shall not cause or allow the emission of particles or any contaminants in sufficient amounts or of such duration from any process as to be injurious to humans, animals, plants, or property, or to be a public nuisance, or create a condition of air pollution.

(a) The permittee shall not cause the handling, transporting, or storage of any material in a manner which allows or may allow unnecessary amounts of particulate matter to become airborne.

(b) When dust, fumes, gases, mist, odorous matter, vapors, or any combination thereof escape from a building or equipment in such a manner and amount as to cause a nuisance to property other than that from which it originated or to violate any other provision of Mississippi Administrative Code, Title 11, Part 2, Chapter 1, the Commission may order such corrected in a way that all air and gases or air and gas-borne material leaving the building or equipment are controlled or removed prior to discharge to the open air.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.3.C.)

1.14 *Right of Entry*: The permittee shall allow the Mississippi Department of Environmental Quality, Office of Pollution Control and the Mississippi Environmental Quality Permit Board and/or their representatives, upon presentation of credentials:

(a) To enter at reasonable times upon the permittee's premises where an air emission source is located or in which any records are required to be kept under the terms and conditions of this permit; and

(b) To have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect any monitoring equipment or monitoring method required in this permit; and to sample any air contaminants or waste waters, fuel, process material, or other material which affects or may affect emission of air contaminants from any source.

(Ref.: Miss. Code Ann. 49-17-21)

1.15 *Permit Modification or Revocation*: After notice and opportunity for a hearing, the Permit Board may modify the permit or revoke it in whole or in part for good cause shown including, but not limited to, the following:

(a) Persistent violation of any of the terms or conditions of this permit;

(b) Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or

(c) A change in federal, state, or local laws or regulations that require either a temporary or permanent reduction or elimination of previously authorized air emission.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.C.)

1.16 *Public Record and Confidential Information*: Except for information determined to be confidential under the Mississippi Air and Water Pollution Control Law, all information obtained in accordance with the terms of this permit shall be available for public inspection at the offices of the Mississippi Department of Environmental Quality, Office of Pollution Control.

(Ref.: Miss. Code Ann. 49-17-39)

1.17 *Permit Transfer*: This permit shall not be transferred except upon approval of the Permit Board.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.16.B.)

1.18 *Severability*: The provisions of this permit are severable. If any provision of the permit, or the application of any provision of the permit to any circumstances, is challenged or held invalid, the validity of the remaining permit provisions and/or portions thereof or their application to other persons or sets of circumstances, shall not be affected thereby.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.1.D(7).)

1.19 *Permit Expiration*: The permit to construct will expire if construction does not begin within eighteen (18) months from the date of issuance, if construction is suspended for eighteen (18) months or more, or if construction is not completed within a reasonable time. The MDEQ may extend the 18-month period upon a satisfactory showing that an extension is justified.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.5.C(1)., R. 2.5.C(4)., and R. 5.2.)

1.20 *Beginning Operation*: After certification of construction by the permittee, the Permit to Construct shall be deemed to satisfy the requirement for a permit to operate until the date the application for issuance or modification of the Title V Permit or the application for issuance or modification of the State Permit to Operate (whichever is applicable) is due. This provision is not applicable to a source excluded from the requirement for a permit to operate as provided by Mississippi Administrative Code, Title 11, Part 2, Chapter 2, Rule 2.13.G.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.5.D(4).)

1.21 *Application for a Permit to Operate*: The application for issuance or modification of the State Permit to Operate or the Title V Permit (whichever is applicable) is due no later than six (6) months after issuance of this modified permit.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B(11).)

1.22 *Operating Under a Permit to Construct*: Upon submittal of a timely and complete application for issuance or modification of a State Permit to Operate or a Title V Permit, (whichever is applicable) the applicant may continue to operate under the terms and conditions of the Permit to Construct and in compliance with the submitted application until the Permit Board issues, modifies, or denies the Permit to Operate.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.5.D(6).)

1.23 Except as otherwise specified herein, the permittee shall be subject to the following provisions with respect to upsets, startups, and shutdowns.

(a) Upsets (as defined in 11 Miss. Admin. Code Pt. 2, R. 1.2.)

(1) For an upset, the Commission may pursue an enforcement action for noncompliance with an emission standard or other requirement of an applicable rule, regulation, or permit. In determining whether to pursue enforcement action, and/or the appropriate enforcement action to take, the Commission may consider whether the source has demonstrated through properly signed contemporaneous operating logs or other relevant evidence the following:

(i) An upset occurred and that the source can identify the cause(s) of the upset;

(ii) The source was at the time being properly operated;

(iii) During the upset the source took all reasonable steps to minimize levels of emissions that exceeded the emission standard or other requirement of an applicable rule, regulation, or permit;

(iv) That within five (5) working days of the time the upset began, the source submitted a written report to the Department describing the upset, the steps taken to mitigate excess emissions or any other noncompliance, and the corrective actions taken and;

(v) That as soon as practicable but no later than twenty-four (24) hours of becoming aware of an upset that caused an immediate adverse impact to human health or the environment beyond the source boundary or caused a general nuisance to the public, the source provided notification to the Department.

(2) In any enforcement proceeding by the Commission, the source seeking to establish the occurrence of an upset has the burden of proof.

(3) This provision is in addition to any upset provision contained in any applicable requirement.

(4) These upset provisions apply only to enforcement actions by the Commission and are not intended to prohibit EPA or third party enforcement actions.

(b) Start-ups and Shutdowns (as defined in 11 Miss. Admin. Code Pt. 2, R. 1.2.)

(1) Start-ups and shutdowns are part of normal source operation. Emission limitations apply during start-ups and shutdowns unless source specific

emission limitations or work practice standards for startups and shutdowns are defined by an applicable rule, regulation, or permit.

(2) Where the source is unable to comply with existing emission limitations established under the State Implementation Plan (SIP) and defined in Mississippi Administrative Code, Title 11, Part 2, Chapter 1, the Department will consider establishing source specific emission limitations or work practice standards for start-ups and shutdowns. Source specific emission limitations or work practice standards established for start-ups and shutdowns are subject to the requirements prescribed in Mississippi Administrative Code, Title 11, Part 2, Chapter 1, Rule 1.10.B(2)(a) through (e).

(3) Where an upset (as defined in 11 Miss. Admin. Code Pt. 2, R. 1.2.) occurs during start-up or shutdown, see the upset requirements above.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.10.)

1.24 *General Duty*: All air emission equipment shall be operated as efficiently as possible to minimize emissions of air contaminants.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B(10).)

1.25 *Compliance Testing*: Regarding compliance testing (as applicable):

(a) The results of any emissions sampling and analysis shall be expressed both in units consistent with the standards set forth in any Applicable Rules and Regulations or this permit and in units of mass per time.

(b) Compliance testing will be performed at the expense of the permittee.

(c) Each emission sampling and analysis report shall include but not be limited to the following:

(1) Detailed description of testing procedures;

(2) Sample calculation(s);

(3) Results; and

(4) Comparison of results to all Applicable Rules and Regulations and to emission limitations in the permit.

SECTION 2. EMISSION POINT DESCRIPTION

The permittee is authorized to construct and/or modify and operate, upon certification of construction, air emissions equipment as described in the following table:

Emission Point	Description
AA-000	Facility-Wide (MS Silicon, LLC – Silicon Manufacturing Plant)
AA-100	**Raw Material Receiving, Handling, Storage, and Furnace Loading Operations**
AA-101	Material Handling and Transfer to for Coal Storage Piles ▪ Located outside and east of raw material main hopper ▪ Enclosed with a three-sided structure and roof
AA-101a	Conveyance of Coal to Charging Storage Silos ▪ Raw Material Conveyance [covered] to Raw Material Charging Silo Equipment [located inside the building that contains Submerged Arc Furnaces No. 1 and No. 2] ▪ Raw Material Hopper [equipped with a 9,000 actual cubic feet per minute (acfm) dust collector (Control Device ID: DC1)]
AA-102	Material Handling and Transfer for Wood Storage Piles [located outside and east of raw material main hopper]
AA-102a	Conveyance of Wood to Charging Storage Silos ▪ Raw Material Conveyance [covered] to Raw Material Charging Silo Equipment [located inside the building that contains Submerged Arc Furnaces No. 1 and No. 2] ▪ Raw Material Hopper [equipped with a 9,000 acfm dust collector (Control Device ID: DC1)]
AA-102b	Wood Chippers [located outside in vicinity of wood storage area; used to size hardwood for silicon production]
AA-103	Material Handling and Transfer for Quartz Storage Piles [located outside and east of raw material main hopper]
AA-103a	Conveyance of Quartz to Charging Storage Silos ▪ Raw Material Conveyance [covered] to Raw Material Charging Silo Equipment [located inside the building that contains Submerged Arc Furnaces No. 1 and No. 2] ▪ Raw Material Hopper [equipped with a 9,000 acfm dust collector (Control Device ID: DC1)]
AA-104	Material Handling and Transfer for Limestone Storage Piles [located outside and east of raw material main hopper]
AA-105	Raw Material Storage Pile Handling Operations [conducted with a front-end loader]
AA-106	Wind Erosion on Coal, Wood, Quartz, Charcoal, and Limestone Storage Piles
AA-200	**Silicon Manufacturing Operations**

Emission Point	Description
AA-201	Two (2) Submerged Arc Furnaces (Facility Ref. SAF No. 1 and No. 2) [emissions from each furnace are routed to a corresponding negative pressure baghouse (Control Device I.D. BG1 and BG2) that vents to a common stack]
AA-201a	Casting Frame Operations [used to form molten silicon product]
AA-202	Natural Gas Combustion Equipment [includes three (3) 10.0 MMBTU / hour natural gas-fired preheaters – two (2) are used to preheat casting ladles and one (1) is used for drying]
AA-300	**Product Refinement and Handling Operations**
AA-301	Silicon Crushing / Sizing, Bag Filling, and Grinding Operations ▪ A respective dust collector (Control Device I.D. DC2, DC3, and DC4) controls the emissions from each activity: – DC2 controls crushing and sizing activities with a flow rate of 47,000 acfm – DC3 controls bag filling activities with a flow rate of 9,000 acfm – DC4 controls grinding activities with a flow rate of 26,000 acfm
AA-400	**Miscellaneous Facility-Wide Operations and Activities**
AA-402	Haul Roads [paved and unpaved; *fugitive source*]
AA-402a	Vehicle Transport of Raw Materials [from material storage piles to submerged arc furnace building; *fugitive source*]
AA-403	Dross Handling and Storage Activities
AA-404	Silica Fume Storage Silos [equipped with bin vent filters]
AA-405	Miscellaneous Activities: ▪ Silica Fume Silo Load-Out Operations ▪ Cooling Tower ▪ Diesel Storage Tanks
AA-500	**Facility-Wide Emergency Support Equipment**
AA-501	442 HP Diesel-Fired Emergency Generator Engine [manufactured after 2014]
AA-502	300 HP Diesel-Fired Emergency Generator Engine [manufactured after 2014]
AA-503	11 HP Liquid Petroleum Gas (LPG)-Fired Emergency Generator Engine [manufactured after 2014]

SECTION 3. EMISSION LIMITATIONS AND STANDARDS

Emission Point(s)	Applicable Requirement	Condition Number	Pollutant / Parameter	Limitation / Standard
AA-000	11 Miss. Admin. Code Pt. 2, R. 2.2.B(10)., as established in PSD Permit to Construct issued November 27, 2013	3.1	HAPs	9.90 tpy (Individual) 24.90 (Total) (Rolling 12-Month Totals)
		3.2	Opacity (fugitive emissions)	≤ 10%
	40 CFR Part 63, Subpart YYYYYY – NESHAP for Area Sources: Ferroalloys Production Facilities 40 CFR 63.11524(a) and (b)(2); Subpart YYYYYY	3.3	PM Opacity	General Applicability
AA-101 AA-102 AA-103 AA-104	11 Miss. Admin. Code Pt. 2, R. 2.2.B(10)., as established in PSD Permit to Construct issued June 20, 2022	3.4	Coal Throughput	71,645 tpy (Rolling 12-Month Total)
			Wood Throughput	148,230 tpy (Rolling 12-Month Total)
			Quartz Throughput	148,230 tpy (Rolling 12-Month Total)
			Limestone Throughput	4,000 tpy (Rolling 12-Month Total)
AA-101a AA-102a AA-103a AA-301	11 Miss. Admin. Code Pt. 2, Ch. 5. and 40 CFR 52.21(j), as established in PSD Permit to Construct issued November 27, 2013 and revised June 20, 2022 **(PSD BACT Limit)** **(PSD BACT Standard)**	3.5	PM / PM_{10} / $PM_{2.5}$	0.003 gr. / dscf; and Operational Requirements (Dust Collectors)
AA-102b	11 Miss. Admin. Code Pt. 2, Ch. 5. and 40 CFR 52.21(j), as established in PSD Permit to Construct issued November 27, 2013 **(PSD BACT Standard)**	3.6	PM / PM_{10} / $PM_{2.5}$	Operational Requirement (Partial Enclosure)
AA-201	40 CFR 63.11526; Subpart YYYYYY	3.7	Visible Emissions (common stack)	≤ 5% of Accumulated Occurrences (60-Minute Observation Period)
			Opacity (furnace building)	≤ 20% (6-Minute Average)

Emission Point(s)	Applicable Requirement	Condition Number	Pollutant / Parameter	Limitation / Standard
AA-201	40 CFR Part 60, Subpart Z – Standards of Performance for Ferroalloy Production Facilities 40 CFR 60.260; Subpart Z	3.8	PM Opacity CO	General Applicability
	40 CFR 60.262(a)(1) and 60.263(a); Subpart Z	3.9	PM	0.45 kg. / MW-Hour (or 0.99 lbs. / MW-Hour)
			CO	< 20 vol.% (Dry Basis)
	40 CFR 60.262(a)(3); Subpart Z 11 Miss. Admin. Code Pt. 2, Ch. 5. and 40 CFR 52.21(j), as established in PSD Permit to Construct issued June 20, 2022 **(PSD BACT Limit)**		Opacity	< 15%
	40 CFR 60.262(a)(4) and (5); Subpart Z	3.10	All Pollutants	Emission Restrictions
	40 CFR 60.265(d) and (f); Subpart Z	3.11	Volumetric Flow Rate	Operating Limits
	11 Miss. Admin. Code Pt. 2, Ch. 5. and 40 CFR 52.21(j), as established in PSD Permit to Construct issued November 27, 2013 **(PSD BACT Limits)**	3.12	PM / PM_{10} / $PM_{2.5}$	0.005 grains / dscf (3-Hour Average)
	11 Miss. Admin. Code Pt. 2, Ch. 5. and 40 CFR 52.21(j), as established in PSD Permit to Construct issued June 20, 2022 **(PSD BACT Limits)**	3.13	VOCs	12.1 lb. / hour (3-Hour Average)
		3.14	GHG (as CO_2e)	265,555.58 tpy (Rolling 12-Month Total)
	11 Miss. Admin. Code Pt. 2, Ch. 5. and 40 CFR 52.21(k), as established in PSD Permit to Construct issued June 20, 2022 **(PSD Air Quality Limits)**	3.15	NO_X	475 lb. / hour (Rolling 3-Hour Average) 971.3 tpy (Rolling 12-Month Total)
			CO	270 lb. / hour (Rolling 3-Hour Average) 713.7 tpy (Rolling 12-Month Total)
			SO_2	440 lb. / hour (Rolling 3-Hour Average) 1,093.6 tpy (Rolling 12-Month Total)
AA-202	11 Miss. Admin. Code Pt. 2, R. 1.3.D(1)(b).	3.16	PM	$E = 0.8808 (I^{-0.1667})$

Emission Point(s)	Applicable Requirement	Condition Number	Pollutant / Parameter	Limitation / Standard
AA-202	11 Miss. Admin. Code Pt. 2, Ch. 5. and 40 CFR 52.21(j), as established in PSD Permit to Construct issued June 20, 2022 **(PSD BACT Limits)** **(PSD BACT Standard)**	3.17	NO_X	0.08 Pounds / MMBTU Implement Best Management Practices
			SO_2	0.0006 Pounds / MMBTU
			CO	0.0824 Pounds / MMBTU
			VOCs	0.0054 Pounds / MMBTU
			PM	0.0005 Pounds / MMBTU
			GHG	117 Pounds CO_2 / MMBTU; 0.0022 Pounds CH_4 / MMBTU; and 0.0002 Pounds N_2O / MMBTU
AA-404	11 Miss. Admin. Code Pt. 2, Ch. 5. and 40 CFR 52.21(j), as established in PSD Permit to Construct issued November 27, 2013 **(PSD BACT Limit)** **(PSD BACT Standard)**	3.18	PM / PM_{10} / $PM_{2.5}$	0.01 grains / dscf; and Utilize Bin Vent Filter
AA-501 AA-502 AA-503	11 Miss. Admin. Code Pt. 2, R. 1.3.D(1)(a).	3.19	PM	0.6 Pounds / MMBTU Heat Input
	40 CFR Part 63, Subpart ZZZZ – NESHAP for Reciprocating Internal Combustion Engines 40 CFR 63.6585 and 63.6590(c); Subpart ZZZZ	3.20	HAPs	General Applicability
	40 CFR 60.4211(f)(1) – (3); Subpart IIII 40 CFR 60.4243(d)(1) – (3); Subpart JJJJ	3.21	Operational Requirements	100 Hours / Calendar Year for Maintenance and Readiness Testing; 50 Hours / Calendar Year for Non-Emergency Situations
AA-501 AA-502	40 CFR Part 60, Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines 40 CFR 60.4200(a)(2)(i); Subpart IIII	3.22	$NMHC + NO_X$ CO PM	General Applicability
AA-501 AA-502	40 CFR 60.4207(b); Subpart IIII	3.23	Fuel Requirement	15 ppm Sulfur Content (Max.); and 40 Cetane Index (Min.) or 35% Aromatic Content (Max. – by volume)

Emission Point(s)	Applicable Requirement	Condition Number	Pollutant / Parameter	Limitation / Standard
	40 CFR 60.4202(a)(2), 60.4205(b), and 60.4211(c); Subpart IIII	3.24	NMHC + NO_X	4.0 Grams / Kilowatt-Hour
	40 CFR 60.4202(a)(2), 60.4205(b), and 60.4211(c); Subpart IIII	3.24	CO	3.5 Grams / Kilowatt-Hour
			PM	0.20 Grams / Kilowatt-Hour
			Opacity (Smoke)	20% (Acceleration Mode); 15% (Lugging Mode); 50% (Peaks During Either Mode)
AA-503	40 CFR Part 60, Subpart JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines 40 CFR 60.4230(a)(4)(iii); Subpart JJJJ	3.25	HC + NO_X CO	General Applicability
	40 CFR 60.4231(a), 60.4233(a), and 60.4234; Subpart JJJJ	3.26	HC + NO_X	8.0 Grams / Kilowatt-Hour
			CO	610 Grams / Kilowatt-Hour

3.1 For Emission Point AA-000 (Facility-Wide), the permittee shall limit the emission of hazardous air pollutants (HAPs) to no more than 9.90 tpy for each individual HAP and 24.90 tpy for all HAPs in total based on a rolling 12-month total basis.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B(10)., as established in PSD Permit to Construct issued November 27, 2013)

3.2 For Emission Point AA-000 (Facility-Wide), unless otherwise specified or limited herein, the permittee shall not cause or allow the emission of any fugitive or uncaptured contaminant into the ambient air from a point source of such opacity as to obscure an observer's view to a degree in excess of ten (10) percent. This shall not apply to vision obscuration caused by uncombined water droplets.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B(10)., as established in PSD Permit to Construct issued November 27, 2013)

3.3 For Emission Point AA-000 (Facility-Wide), the permittee is subject to and shall comply with all applicable requirements found in 40 CFR Part 63, Subpart YYYYYY – National Emission Standards for Hazardous Air Pollutants (NESHAP) for Area Sources: Ferroalloys Production Facilities and the 40 CFR Part 63, Subpart A – General Provisions (as required by Table 1 of Subpart YYYYYY).

(Ref.: 40 CFR 63.11524(a) and (b)(2), Subpart YYYYYY)

3.4 For Emission Points AA-101, AA-102, AA-103, and AA-104, the permittee shall limit the total throughput of the following raw materials for the production of silicon in tons per year (tpy) based on a rolling 12-month basis:

Raw Material	Max. Throughput (tpy)
Coal (Emission Point AA-101)	71,645
Wood (Emission Point AA-102)	148,230
Quartz (Emission Point AA-103)	148,230
Limestone (Emission Point AA-104)	4,000

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B(10)., as established in PSD Permit to Construct issued June 20, 2022)

3.5 For Emission Points AA-101a, AA-102a, AA-103a, and AA-301, the permittee shall limit the total emission of particulate matter (PM, PM_{10}, and $PM_{2.5}$) from each dust collector to no more than 0.003 grains per dry standard cubic foot (dscf).

Additionally, the permittee shall operate the dust collector associated with each activity at all times during active operation to minimize the emission of particulate matter. In the event that a dust collector malfunctions or fails, the permittee shall cease the associated activity until such time the dust collector returns to service.

(Ref.: 11 Miss. Admin. Code Pt. 2, Ch. 5. and 40 CFR 52.21(j), as established in PSD Permit to Construct issued November 27, 2013 and revised June 20, 2022 – PSD BACT Limit and PSD BACT Standard)

3.6 For Emission Point AA-102b, the permittee shall ensure the structural integrity of the enclosure that contains the wood chippers is sustained as a partial enclosure.

For the purpose of this permit, a "partial enclosure" shall be defined as any structure comprised of walls or partitions on at least three (3) sides or three-quarters of the perimeter surrounding the wood chippers to prevent the entrainment of particulate matter into the air a minimum of ninety (90) percent control efficiency.

(Ref.: 11 Miss. Admin. Code Pt. 2, Ch. 5. and 40 CFR 52.21(j), as established in PSD Permit to Construct issued November 27, 2013 – PSD BACT Standard)

3.7 For Emission Point AA-201, the permittee shall comply with the following emission standards:

(a) The overall detection of visible emissions from the common stack shall be no more than five (5) percent of the accumulated occurrences in a 60-minute observation period; and

(b) The opacity of fugitive particulate matter (PM) emissions from the submerged arc furnace (SAF) building shall not exceed twenty (20) percent (based on a 6-minute average) with the exception of one (1) 6-minute average per hour that does not exceed sixty (60) percent.

(Ref.: 40 CFR 63.11526; Subpart YYYYYY)

3.8 For Emission Point AA-201, the permittee is subject to and shall comply with all applicable requirements found in 40 CFR Part 60, Subpart Z - Standards of Performance for Ferroalloy Production Facilities and 40 CFR Part 60, Subpart A – General Provisions.

(Ref.: 40 CFR 60.260, Subpart Z)

3.9 For Emission Point AA-201, the permittee shall only emit gases from the common stack that comply with the following standards:

(a) No more than 0.45 kilograms of particulate matter (PM) per megawatt-hour (or 0.99 pounds of PM per megawatt-hour) while producing silicon;

(b) Less than twenty (20) volume percent of carbon monoxide (CO) on a dry basis; and

(c) An opacity of less than fifteen (15) percent;

(Ref.: 40 CFR 60.262(a)(1), (3), and 60.263(a); Subpart Z)

(Ref.: 11 Miss. Admin. Code Pt. 2, Ch. 5. and 40 CFR 52.21(j), as established in PSD Permit to Construct issued June 20, 2022 – PSD BACT Limit)

3.10 For Emission Point AA-201, the permittee shall not allow the emission of any gases into the atmosphere that meet the following criteria during periods when a volumetric flow rate is being established in accordance with 40 CFR 60.265(d), Subpart Z:

(a) Exit from a SAF, escape the associated capture system, **and** are visible without the aid of instruments.

(b) Escape a capture system at the tapping station **and** are visible without the aid of instruments for more than forty (40) percent of a tapping period.

This requirement specified in paragraph (b) does not apply in the event of a blowing tap. For the purpose of this permit, a “blowing tap” means any tap in which an evolution of gas forces or projects jets of flame or metal sparks beyond the ladle, runner, or collection hood.

(Ref.: 40 CFR 60.262(a)(4) and (5); Subpart Z)

3.11 For Emission Point AA-201, the permittee shall maintain the volumetric flow rate through each fan / ducted hood of the capture system at or above the power input levels corresponding to fifty (50) percent and one hundred (100) percent of the submerged arc furnace's nominal rated capacity at all times during active operation.

(Ref.: 40 CFR 60.265(d) and (f); Subpart Z)

3.12 For Emission Point AA-201, the permittee shall limit the individual emission of PM, PM_{10}, and $PM_{2.5}$ from the common stack to no more than 0.005 grains per dry standard cubic foot (dscf) based on 3-hour average.

(Ref.: 11 Miss. Admin. Code Pt. 2, Ch. 5. and 40 CFR 52.21(j), as established in PSD Permit to Construct issued November 27, 2013 – PSD BACT Limits)

3.13 For Emission Point AA-201, the permittee shall limit the emission of volatile organic compounds (VOCs) from the common stack to no more than 12.1 pounds per hour based on a 3-hour average.

(Ref.: 11 Miss. Admin. Code Pt. 2, Ch. 5. and 40 CFR 52.21(j), as established in PSD Permit to Construct issued June 20, 2022 – PSD BACT Limit)

3.14 For Emission Point AA-201, the permittee shall limit the total emission of greenhouse gases (GHG – as equivalent carbon dioxide or CO_2e) from both submerged arc furnaces to no more than 265, 555.68 tons per year (tpy) based on a rolling 12-month total.

(Ref.: 11 Miss. Admin. Code Pt. 2, Ch. 5. and 40 CFR 52.21(j), as established in PSD Permit to Construct issued June 20, 2022 – PSD BACT Limit)

3.15 For Emission Point AA-201, the permittee shall limit the emission of the following pollutants from the common stack to no more than as noted in pounds per hour (based on a rolling 3-hour average) and in tons per year (based on a rolling 12-month total):

Pollutant	Pounds / Hour	Tons / Year
(a) Nitrogen Oxides (NO_X)	475.0	971.3
(b) Sulfur Dioxide (SO_2)	440.0	1,093.6
(c) Carbon Monoxide (CO)	270.0	731.7

(Ref.: 11 Miss. Admin. Code Pt. 2, Ch. 5. and 40 CFR 52.21(k), as established in the PSD Permit to Construct issued June 20, 2022 – PSD Air Quality Limits)

3.16 For Emission Point AA-202, unless otherwise specified or limited herein, the maximum permissible emission of ash and/or particulate matter (PM) from each fossil fuel burning installation equal to / greater than ten (10) MMBTU per hour heat input but less than 10,000

MMBTU per hour heat input shall not exceed an emission rate as determined by the relationship:

$$E = 0.8808 (I^{-0.1667})$$

where "E" is the emission rate in pounds per MMBTU per hour heat input and "I" is the heat input in MMBTU per hour.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.3.D(1)(b).)

3.17 For Emission Point AA-202, the permittee shall limit the respective emission of the following pollutants to no more than as noted in pounds per MMBTU heat input:

Pollutant	Pounds / MMBTU
(a) Nitrogen Oxides (NO_X)	0.08
(b) Sulfur Dioxide (SO_2)	0.0006
(c) Carbon Monoxide (CO)	0.0824
(d) Volatile Organic Compounds (VOCs)	0.0054
(e) Particulate Matter (PM)	0.0005
(f) Carbon Dioxide (CO_2)	117
(g) Methane (CH_4)	0.0022
(h) Nitrous Oxide (N_2O)	0.0002

Additionally, the permittee shall only combust natural gas as a fuel source.

(Ref.: 11 Miss. Admin. Code Pt. 2, Ch. 5. and 40 CFR 52.21(j), as established in PSD Permit to Construct issued June 20, 2022 – PSD BACT Limits and BACT Standard)

3.18 For Emission Point AA-404, the permittee shall limit the total emission of particulate matter (PM, PM_{10}, and $PM_{2.5}$) to more than 0.01 grains per dry standard cubic foot (gr. / dscf). Additionally, the permittee shall minimize PM emissions by utilizing a bin vent filter.

(Ref.: 11 Miss. Admin. Code Pt. 2, Ch. 5. and 40 CFR 52.21(j), as established in PSD Permit to Construct issued November 27, 2013 – PSD BACT Limit and BACT Standard)

3.19 For Emission Points AA-501, AA-502, and AA-503, the maximum permissible emission of ash and/or particulate matter (PM) from each fossil fuel burning installation of less than ten (10) MMBTU per hour heat input shall not exceed 0.6 pounds per MMBTU per hour heat input.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.3.D(1)(a).)

3.20 For Emission Points AA-501, AA-502, and AA-503, the permittee is subject to and shall comply with the applicable requirements found in 40 CFR Part 63, Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants (NESHAP) for Reciprocating Internal Combustion Engines 40 CFR Part 63, Subpart A – General Provisions (as required by Table 8 of Subpart ZZZZ).

For the purpose of this permit, the permittee shall comply with Subpart ZZZZ by complying with the applicable requirements found in 40 CFR Part 60, Subpart IIII and Subpart JJJJ. No further requirements apply for such engines under Subpart ZZZZ.

(Ref.: 40 CFR 63.6585 and 63.6590(c); Subpart ZZZZ)

3.21 For Emission Points AA-501, AA-502, and AA-503, any operation of an engine for any reason other than emergency operation, maintenance and testing, and operation in non-emergency situations for fifty (50) hours per year is prohibited. If an engine is not operated in accordance with paragraphs (a) through (c) of this condition, an engine will not be considered an emergency engine under the referenced regulation and shall meet all requirements for a corresponding non-emergency engine.

(a) There is no time limit on the use of an engine in emergency situations.

(b) The permittee may operate an engine for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, or the insurance company accompanied with the engine. Maintenance checks and readiness testing of an engine is limited to a maximum of one hundred (100) hours per calendar year. The permittee may petition the MDEQ for approval of additional hours to be used for maintenance checks and readiness testing. However, a petition is not required if the permittee maintains records indicating that Federal, State, or local standards require maintenance and testing of the engine beyond 100 hours per calendar year.

(c) The permittee may operate an engine for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing. The 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(Ref.: 40 CFR 60.4211(f)(1) – (3); Subpart IIII)

(Ref.: 40 CFR 60.4243(d)(1) – (3); Subpart JJJJ)

3.22 For Emission Points AA-501 and AA-502, the permittee is subject to and shall comply with all applicable requirements found in 40 CFR Part 60, Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines and 40 CFR Part 60, Subpart A – General Provisions (as specified in Table 8 of Subpart IIII).

(Ref.: 40 CFR 60.4200(a)(2)(i); Subpart IIII)

3.23 For Emission Points AA-501 and AA-502, the permittee shall only combust diesel fuel within each engine that meet the following requirements (on a per-gallon basis):

(a) A maximum sulfur content of fifteen (15) ppm; and

(b) A minimum cetane index of forty (40) or a maximum aromatic content of thirty-five (35) volume percent.

(Ref.: 40 CFR 60.4207(b); Subpart IIII)

3.24 For Emission Points AA-501 and AA-502, the permittee shall comply with the following emission standards:

a) Non-methane Hydrocarbons + Nitrogen Oxides (NMHC + NO_X): 4.0 grams per kilowatt-hour;

(b) Carbon Monoxide (CO): 3.5 grams per kilowatt-hour; and

(c) Particulate Matter (PM): 0.20 grams per kilowatt-hour.

Additionally, the permittee shall not discharge into the atmosphere any smoke exhaust that exceeds the following opacity standards:

(d) Twenty (20) percent during the acceleration mode;

(e) Fifteen (15) percent during the lugging mode; and

(f) Fifty (50) percent during the peaks in either the acceleration or lugging modes.

The engine shall be installed and configured in accordance with the manufacturer's emission-related specifications. Additionally, the permittee shall operate and maintain each engine in such a manner to achieve the referenced emission standards over the entire life of the engine.

(Ref.: 40 CFR 60.4202(a)(2), 60.4205(b), 60.4205(b), and 60.4211(c); Subpart IIII)

3.25 For Emission Point AA-503, the permittee is subject to and shall comply with all applicable requirements found in 40 CFR Part 60, Subpart JJJJ – Standards of Performance for Spark Ignition Internal Combustion Engines and 40 CFR Part 60, Subpart A – General Provisions (as required by Table 3 of Subpart JJJJ).

(Ref.: 40 CFR 60.4230(a)(4)(iii); Subpart JJJJ)

3.26 For Emission Point AA-503, the permittee shall comply with the following emission standards:

(a) Hydrocarbons + Nitrogen Oxides (HC + NO_X): 8.0 grams per kilowatt-hour; and

(b) Carbon Monoxide (CO): 610 grams per kilowatt-hour.

The permittee shall operate and maintain the engine in such a manner to achieve the noted emission standards over the entire life of the engine.

(Ref.: 40 CFR 60.4231(a), 60.4233(a), and 60.4234; Subpart JJJJ)

SECTION 4. WORK PRACTICE STANDARDS

Emission Point(s)	Applicable Requirement	Condition Number	Pollutant / Parameter	Work Practice
AA-101 AA-102 AA-103 AA-104 AA-403	11 Miss. Admin. Code Pt. 2, Ch. 5. and 40 CFR 52.21(j), as established in PSD Permit to Construct issued November 27, 2013 **(PSD BACT Standard)**	4.1	PM / PM_{10} / $PM_{2.5}$	Implement Best Management Practices
AA-105 AA-402 AA-402a	11 Miss. Admin. Code Pt. 2, Ch. 5. and 40 CFR 52.21(j), as established in PSD Permit to Construct issued November 27, 2013 **(PSD BACT Standard)**	4.2	PM / PM_{10} / $PM_{2.5}$	Implement Best Management Practices
AA-106	11 Miss. Admin. Code Pt. 2, Ch. 5. and 40 CFR 52.21(j), as established in PSD Permit to Construct issued November 27, 2013 **(PSD BACT Standard)**	4.3	PM / PM_{10} / $PM_{2.5}$	Implement Best Management Practices
AA-201	11 Miss. Admin. Code Pt. 2, Ch. 5. and 40 CFR 52.21(j), as established in PSD Permit to Construct issued November 27, 2013 and revised June 20, 2022 **(PSD BACT Standard)**	4.4	PM / PM_{10} / $PM_{2.5}$ CO NO_X SO_2	Implement Best Combustion Practices
AA-201a	11 Miss. Admin. Code Pt. 2, Ch. 5. and 40 CFR 52.21(j), as established in PSD Permit to Construct issued November 27, 2013 **(PSD BACT Standard)**	4.5	PM / PM_{10} / $PM_{2.5}$	Develop and Implement a System of Best Management Practices
AA-501 AA-502	40 CFR 60.4211(a); Subpart IIII	4.6	NMHC + NO_X CO PM	Conduct Best Management Practices

4.1 For Emission Points AA-101, AA-102, AA-103, AA-104, and AA-403, the permittee shall implement the following best management practices (as appropriate) in accordance with the Fugitive Dust Control Plan to minimize the emission of fugitive particulate matter:

(a) Install and maintain a 3-side windscreen barrier for each raw material storage area (where technically feasible); and/or

(b) Reduce the drop height of materials conveyed and handled; and/or

(c) Use chemical stabilizers; and/or

(d) Use watering techniques.

(Ref.: 11 Miss. Admin. Code Pt. 2, Ch. 5. and 40 CFR 52.21(j), as established in PSD Permit to Construct issued November 27, 2013 – PSD BACT Standard)

4.2 For Emission Points AA-105, AA-402, and AA-402a, the permittee shall implement the following best management practices (as appropriate) in accordance with the Fugitive Dust Control Plan to minimize the emission of fugitive particulate matter:

(a) Apply wet suppressants and/or water;

(b) Utilize posting and speed reduction techniques; and

(c) Vacuum or utilize sweeping methodologies.

(Ref.: 11 Miss. Admin. Code Pt. 2, Ch. 5. and 40 CFR 52.21(j), as established in PSD Permit to Construct issued November 27, 2013– PSD BACT Standard)

4.3 For Emission Point AA-106, the permittee shall implement the following best management practices in accordance with the Fugitive Dust Control Plan to minimize the emission of fugitive particulate matter:

(a) Apply water and / or dust suppressants; and

(b) Utilize wind screens.

(Ref.: 11 Miss. Admin. Code Pt. 2, Ch. 5. and 40 CFR 52.21(j), as established in PSD Permit to Construct issued November 27, 2013– PSD BACT Standard)

4.4 For Emission Point AA-201, the permittee shall implement best combustion practices in accordance with the Emission Reduction Operating Plan found in Appendix B to minimize the emission of both fugitive and uncaptured nitrogen oxides (NO_X), carbon monoxide (CO), sulfur dioxide (SO_2), and particulate matter.

(Ref.: 11 Miss. Admin. Code Pt. 2, Ch. 5. and 40 CFR 52.21(j), as established in PSD Permit to Construct issued November 27, 2013 and revised June 20, 2022 – PSD BACT Standard)

4.5 For Emission Point AA-201a, the permittee shall develop and implement a system of best management practices to minimize the generation of fugitive particulate matter emissions.

(Ref.: 11 Miss. Admin. Code Pt. 2, Ch. 5. and 40 CFR 52.21(j), as established in PSD Permit to Construct issued November 27, 2013 – PSD BACT Standard)

4.6 For Emission Points AA-501 and AA-502, the permittee shall adhere to the following work practices:

(a) Operate and maintain each engine and control device (if any) according to the manufacturer's emission-related written instructions;

(b) Change only those emission-related settings that are permitted by the manufacturer; and

(c) Meet the requirements of 40 CFR Part 1068 (as applicable).

(Ref.: 40 CFR 60.4211(a), Subpart IIII)

SECTION 5. MONITORING AND RECORDKEEPING REQUIREMENTS

Emission Point(s)	Applicable Requirement	Condition Number	Pollutant / Parameter	Monitoring / Recordkeeping Requirement
AA-000	11 Miss. Admin. Code Pt. 2, R. 2.9.	5.1	Recordkeeping	Maintain Records For a Minimum of Five (5) Years
	11 Miss. Admin. Code Pt. 2, R. 2.2.B(11).	5.2	HAPs	Calculate Emissions (Monthly and Rolling 12-Month Total)
		5.3	PM / PM_{10} / $PM_{2.5}$	Perform a Monthly Inspection on Each Air Pollution Control Device
		5.4	Opacity (fugitive emissions)	Perform Weekly Visible Emission Observations
AA-101 AA-102 AA-103 AA-104	11 Miss. Admin. Code Pt. 2, R. 2.2.B(11).	5.5	Raw Material Throughput	Monitor Usage (Monthly and Rolling 12-Month Total)
AA-101a AA-102a AA-103a AA-301 AA-404	11 Miss. Admin. Code Pt. 2, R. 2.2.B(11).	5.6	PM / PM_{10} / $PM_{2.5}$	Monitor the Pressure Drop Across Each Control Device Weekly
AA-201	40 CFR 63.11527(a); Subpart YYYYYY	5.7	Opacity	Compliance Demonstration Requirements
	40 CFR 63.11528(b); Subpart YYYYYY	5.8		
	40 CFR 63.11528(c); Subpart YYYYYY	5.9	Opacity (fugitive emissions)	Conduct a Routine VEE on SAF Building
	40 CFR 63.11529(d); Subpart YYYYYY	5.10	Opacity	Recordkeeping Requirements
	40 CFR 60.264(a); Subpart Z	5.11	Opacity	Operate and Maintain a COMS
	40 CFR 60.265(a) – (c), (e), (f), and (g); Subpart Z	5.12	PM Opacity	Monitoring Requirements
AA-201	11 Miss Admin. Code Pt. 2, R. 2.2.B(11).	5.13	PM / PM_{10} / $PM_{2.5}$	Monitor the Pressure Drop Across Each Baghouse Daily
		5.14	GHG (as CO_2e)	Calculate Emissions (Monthly and Rolling 12-Month Total)
		5.15	NO_X SO_2 CO	Continuous Compliance Requirement Operate, Maintain, and Calibrate a CEMS

Emission Point(s)	Applicable Requirement	Condition Number	Pollutant / Parameter	Monitoring / Recordkeeping Requirement
AA-202	11 Miss Admin. Code Pt. 2, R. 2.2.B(11).	5.16	NO_X SO_2 CO VOCs PM / PM_{10} / $PM_{2.5}$	Monitor Natural Gas Usage; and Maintain Fuel Certification Records
AA-501 AA-502 AA-503	40 CFR 60.4214(b); Subpart IIII 40 CFR 60.4245(b); Subpart JJJJ 11 Miss Admin. Code Pt. 2, R. 2.2.B(11).	5.17	Emergency Engine Status	Monitor Hours of Operation Monthly (Emergency and Non-Emergency)
	40 CFR 60.4214(a)(2); Subpart IIII 40 CFR 60.4245(a); Subpart JJJJ	5.18	NMHC + NO_X CO PM HC + NO_X	Recordkeeping Requirements
AA-501 AA-502	40 CFR 60.4211(g)(1) and (2); Subpart IIII	5.19	NMHC + NO_X CO PM	Compliance Demonstration (As Applicable)
AA-503	40 CFR 4243(a)(2)(i); Subpart JJJJ	5.20	CO HC + NO_X	Compliance Demonstration (As Applicable)

5.1 For Emission Point AA-000 (Facility-Wide), the permittee shall retain all required records, monitoring data, supporting information and reports for a period of at least five (5) years from the date of the monitoring sample, measurement, report, or application. Supporting information includes (but is not limited to) all calibration and maintenance records, all original strip-chart recordings or other data for continuous monitoring instrumentation, and copies of all reports required by this permit. Copies of such records shall be submitted to the MDEQ as required by Applicable Rules and Regulations of this permit upon request.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.9.)

5.2 For Emission Point AA-000 (Facility-Wide), the permittee shall demonstrate compliance with emission limitations specified in Condition 3.1 by calculating and recording the total emission of each individual HAP and all HAPs in total in tons from all sources that can reasonably emit the pollutant(s) on both on a monthly and rolling 12-month total basis.

Unless otherwise specified herein, the permittee shall include all reference data used to validate calculated emissions from each source (e.g. operational data, applicable emission factors, engineering judgement determinations, performance testing results, etc.).

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B(11).)

5.3 For Emission Point AA-000 (Facility-Wide), the permittee shall perform a monthly inspection on each air pollution control device. If any problem is noted during an inspection, the permittee shall perform and record the necessary maintenance activities to ensure operation of the control device as originally designed. Additionally, preventative maintenance shall be performed in accordance with the manufacturer's recommendations to maintain proper operation of a control device.

The permittee shall maintain documentation that details the date / time each inspection performed, any noted problem experienced, any maintenance (either corrective or preventative) performed to return a control device to operation as originally designed, and any periods of time (including date and duration) in which a control device was non-operational during active operations.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B(11).)

5.4 For Emission Point AA-000 (Facility-Wide), unless otherwise specified herein, the permittee shall perform a visible emissions observation in accordance of EPA Test Method 22 on each point source during daylight hours and during representative operating conditions on a weekly basis. Each observation shall be conducted for a minimum period of six (6) consecutive minutes.

If visible emissions are detected during an observation, the permittee shall demonstrate compliance with the opacity limitation specified in Condition 3.2 by performing a visible emissions evaluation (VEE) in accordance with EPA Test Method 9. In the event that a VEE is required but cannot be conducted, the permittee shall record a written explanation as to why it was not possible to perform the VEE.

The permittee shall maintain all documentation and information specified by EPA Test Method 22 and/or EPA Test Method 9, any corrective actions taken to prevent or minimize emissions as a result of the evaluation, and the date / time when each observation / evaluation was conducted.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B(11).)

5.5 For Emission Points AA-101, AA-102, AA-103, and AA-104, the permittee shall demonstrate compliance with the throughput limitations specified in Condition 3.4 by monitoring and recording the respective raw material throughput on both a monthly and rolling 12-month total basis. Additionally, the permittee shall specify the type of wood (i.e. hardwood or softwood) used as a raw material.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B(11).)

5.6 For Emission Points AA-101a, AA-102a, AA-103a, AA-301, and AA-404, the permittee shall demonstrate compliance with the emission limitations specified in Conditions 3.5 and 3.18 by monitoring and recording the differential pressure drop (in inches of water) across each control device weekly during active operation of the corresponding process equipment. If a monitored pressure drop is outside of the range established within the

manufacturer's specifications, the permittee shall perform and record the necessary maintenance to return a control device to normal operation.

Additionally, the permittee shall maintain documentation that details the manufacturer's specifications for each control device

(Ref. 11 Miss Admin. Code Pt. 2, R. 2.2.B(11).)

5.7 For Emission Point AA-201, the permittee shall monitor the presence of visible emissions from the common stack in accordance with the following methods:

(a) Routine Visual Monitoring:

(1) ***Daily Monitoring***: A visual determination of fugitive emissions shall be performed once per day during active silicon production and on each day in which a furnace is in operation.

(2) ***Weekly Monitoring***: – If no visible fugitive emissions are detected in consecutive daily visual monitoring evaluations performed for ninety (90) days of active furnace operations, the permittee may decrease the frequency of visual monitoring to once per calendar week during active silicon production and furnace operation.

If visible fugitive emissions are detected during a weekly monitoring event, the permittee must resume daily visual monitoring in accordance with paragraph (a) until the permittee satisfies the criteria to again conduct weekly visual monitoring.

If the results of a visual monitoring reveals the presence of visible emissions, the permittee shall demonstrate compliance with the limitations specified in Condition 3.7(a) by conducting a test in accordance with EPA Test Method 22 within twenty-four (24) hours of determining the presence of visible emissions. Each test shall last at least sixty (60) minutes [i.e. ten (10) 6-minute periods].

(Ref.: 40 CFR 63.11527(a); Subpart YYYYYY)

5.8 For Emission Point AA-201, the permittee shall demonstrate compliance with the limit specified in Condition 3.7(a) by conducting a visible emissions test in accordance with EPA Test Method 22 ("Method 22") on a semi-annual basis. Each test shall last at least sixty (60) minutes [i.e. ten (10) 6-minute periods].

(Ref.: 40 CFR 63.11528(b); Subpart YYYYYY)

5.9 For Emission Point AA-201, the permittee shall demonstrate compliance with the opacity limitation specified in Condition 3.7(b) by conducting a routine opacity test in accordance with EPA Test Method 9 (i.e. "Method 9") and 40 CFR 63.6(h), Subpart A to evaluate the emission of fugitive PM from the submerged arc furnace building. Additionally the permittee shall conduct each Method 9 test in accordance to the following requirements:

(a) The permittee shall conduct a test at least once every six (6) months **and** each time in which a process change is likely to increase fugitive emissions.

(b) Each test shall be performed for at least sixty (60) minutes and shall include furnace tapping events.

(c) Each test shall be focused on the part of the building where electrometallurgical operation fugitive emissions are most likely to be observed.

As an alternative to a Method 9 test, the permittee may monitor visible emissions in accordance with EPA Test Method 22 (i.e. "Method 22") for subsequent semi-annual compliance demonstrations.

The Method 22 test is successful if no visible emissions are observed for ninety (90) percent of the readings over the furnace cycle (i.e. tap-to-tap) or 60 minutes (whichever is longer). However, if visible emissions are observed for a period greater than ten (10) percent of the time over the furnace cycle or 60 minutes (whichever is longer), the facility shall conduct Method 9 test as soon as possible but no later than fifteen (15) calendar days after the Method 22 test.

(Ref.: 40 CFR 63.11528(c); Subpart YYYYYY)

5.10 For Emission Point AA-201, the permittee shall maintain documentation that contains the following information (as applicable):

(a) Each notification submitted to comply with Subpart YYYYYY and all documentation supporting any Initial Notification, Notification of Compliance Status, and annual compliance certifications submitted [as required in 40 CFR 63.10(b)(2)(xiv), Subpart A).

(b) The records on all visual monitoring, all Method 22 tests, all Method 9 tests, and the following information:

(1) The date, place, and time of the monitoring event;

(2) The person that conducts the monitoring;

(3) The technique or method used;

(4) The operating conditions during the activity; and

(5) The results (including the date, time, and duration) of the period from the time the monitoring indicated a problem (e.g. visible emissions) to the time that monitoring indicated proper operation.

(Ref.: 40 CFR 63.11529(d); Subpart YYYYYY)

5.11 For Emission Point AA-201, the permittee shall operate, maintain, and calibrate a continuous opacity monitoring system (COMS) in accordance with 40 CFR 60.13, Subpart A that measures the opacity of emissions discharged from the common stack.

The opacity data collected by the COMS shall be maintained to demonstrate continuous compliance with the opacity limitation specified in Condition 3.9(c).

(Ref.: 40 CFR 60.264(a); Subpart Z)

5.12 For Emission Point AA-201, the permittee shall maintain daily records on the following information in accordance with the specified requirements (as applicable):

(a) The product being produced;

(b) A description of the constituents associated with a furnace charge including the quantity (in tons);

(c) The time and duration of each tapping period as well as the identification of the material tapped (i.e. silicon or dross);

(d) *Furnace power input*: The permittee shall install, calibrate [annually in accordance with 40 CFR 60.13(b), Subpart A], maintain, and operate a device to measure and continuously record data for the furnace power input. The furnace power input may be measured at the output or input side of the transformer. However, the device must have an accuracy of ±5% over its operating range.

(e) *Volumetric Flow Rate*: The permittee shall demonstrate continuous compliance with the operating limits specified in Condition 3.11 by utilizing one (1) of the following methods to record and maintain data for the volumetric flow rate through each fan / hooded duct of the capture system:

(1) The permittee shall install, calibrate annually [in accordance with 40 CFR 60.13(b), Subpart A], and maintain a monitoring device that continuously measures and records the volumetric flow rate through each separately ducted hood of the emissions capture system.

If the submerged arc furnace is equipped with a water-cooled cover that is designed to contain and prevent the escape of generated gases and particulate matter (PM), the permittee shall only monitor the volumetric flow rate through the capture system for control of emissions from the tapping station.

The flow rate monitoring device must have an accuracy of ±10% over its normal operating range. However, the MDEQ reserves the right to require the permittee to demonstrate the accuracy of the monitoring device relative to EPA Methods 1 and 2 found in Appendix A of 40 CFR Part 60.

(2) The permittee shall install, calibrate annually [in accordance with 40 CFR 60.13(b), Subpart A], and maintain respective devices that continuously

measure and record the power consumption of the fan motor (in kilowatts) and the pressure drop across the fan. The fan power consumption and pressure drop measurements shall be synchronized to allow real time comparisons of the data. Additionally, the monitoring devices shall have an accuracy of ±5 percent over their normal operating ranges.

The volumetric flow rate through each fan of the capture system shall be determined by utilizing data on the fan power consumption, the pressure drop across the fan, and the fan performance curve. Only data specific to the operation of the submerged arc furnace are acceptable.

The permittee shall maintain on-site a permanent record of the fan performance curve (prepared for a specific temperature). However, the permittee reserves the right to require the permittee to verify the fan performance curve by monitoring necessary fan operating parameters and determining the gas volume moved relative to EPA Methods 1 and 2 found in Appendix A of 40 CFR Part 60.

(Ref.: 40 CFR 60.265(a) – (c), (e), (f), and (g); Subpart Z)

5.13 For Emission Point AA-201, the permittee shall demonstrate compliance with the emission limitation specified in Conditions 3.12 by monitoring and recording the differential pressure drop across each baghouse daily. If a monitored pressure drop is outside of the range established during the last completed PM-related performance test, the permittee shall perform and record the necessary maintenance to return a baghouse to normal operation.

(Ref.: 11 Miss Admin. Code Pt. 2, R. 2.2.B(11).)

5.14 For Emission Point AA-201, the permittee shall demonstrate compliance with the emission limitation specified in Condition 3.14 by calculating and recording the emission of GHG (as CO_2e) in tons both on a monthly and rolling 12-month total basis.

(Ref.: 11 Miss Admin. Code Pt. 2, R. 2.2.B(11).)

5.15 For Emission Point AA-201, the permittee shall demonstrate continuous compliance with the short-term NO_X, SO_2, and CO emission limits specified in Condition 3.15 by operating, maintaining, and calibrating a continuous emission monitoring system (CEMS) in accordance with 40 CFR 60.13 – Subpart A, the applicable performance specifications outlined in Appendix B of 40 CFR Part 60 (i.e. "Appendix B"), and the applicable quality assurance procedures outlined in Appendix F of 40 CFR Part 60 (i.e. "Appendix F").

In lieu of the requirements specified in Sections 5.1.1, 5.1.3, and 5.1.4 of Appendix F, the permittee may conduct either a relative accuracy audit (RAA) or a relative accuracy test audit (RATA) in accordance with the applicable Performance Specifications found in Appendix B on the CEMS at least once every three (3) years [not to exceed more than thirty-six (36) months after the previously completed audit]. However, the permittee shall

conduct a cylinder gas audit (CGA) during each calendar quarter during which a RAA or a RATA is not performed.

In the event that the CEMS malfunctions or becomes non-operational such that monitoring data for NO_X, SO_2, and CO emissions cannot be collected, the permittee shall conduct applicable performance testing for the noted pollutants once every thirty (30) days until such time that the CEMS is again performing to the manufacturer's design and the requirements specified herein. The failure of the CEMS is to be determined by the MDEQ so that the permittee must expediently and readily develop a means of correcting the systems for collecting and measuring the noted pollutant emissions in a timely manner.

(Ref.: 11 Miss Admin. Code Pt. 2, R. 2.2.B(11).)

5.16 For Emission Point AA-202, the permittee shall demonstrate compliance with the BACT emission limits specified Condition 3.17(a) – (e) by monitoring the volume of natural gas combusted and maintaining applicable fuel records that certifies the quality / composition of the corresponding natural gas.

(Ref.: 11 Miss Admin. Code Pt. 2, R. 2.2.B(11).)

5.17 For Emission Points AA-501, AA-502, and AA-503, the permittee shall demonstrate that each engine meets the criteria of an "emergency engine" by monitoring and recording (via a non-resettable hour meter) the hours of operation for each engine on a monthly basis for both emergency and non-emergency service. Additionally, the permittee shall detail (in writing) and maintain what classified each occurrence as either an emergency or a non-emergency.

(Ref.: 40 CFR 60.4214(b); Subpart IIII and 40 CFR 60.4245(b); Subpart JJJJ)
(Ref.: 11 Miss Admin. Code Pt. 2, R. 2.2.B(11).)

5.18 For Emission Points AA-501, AA-502, and AA-503, the permittee shall maintain records that detail the following information:

(a) All notifications submitted to comply with 40 CFR Part 60, Subpart IIII and Subpart JJJJ;

(b) Any maintenance conducted on an engine;

(d) Documentation that indicates an engine is certified to meet the respective emission standards specified in Conditions 3.24 and 3.26.

(Ref.: 40 CFR 60.4214(a)(2); Subpart IIII and 40 CFR 60.4245(a); Subpart JJJJ)

5.17 For Emission Points AA-501 and AA-502, if the permittee does not operate and maintain an engine in accordance with the manufacturer's emission-related written instructions, or the permittee changes emission-related settings in a way that is not permitted by the manufacturer, the permittee shall demonstrate compliance with the respective emission standards specified in Condition 3.24 through the following actions:

(a) Keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate an engine in a manner consistent with good air pollution control practice for minimizing emissions.

(b) Conduct an initial performance test to demonstrate compliance with the applicable emission standards within one (1) year of start-up, or within one (1) year after an engine is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after the permittee changes emission-related settings in a way that is not permitted by the manufacturer.

Any required performance test shall be conducted in accordance with the procedures outlined in 40 CFR 60.4212(a) – (c); Subpart IIII (as applicable).

(Ref.: 40 CFR 60.4211(g)(1) and (2); Subpart IIII)

5.18 For Emission Point AA-503, if the permittee does not operate and maintain the engine in accordance with the manufacturer's emission-related written instructions, or the permittee changes emission-related settings in a way that is not permitted by the manufacturer, the permittee shall demonstrate compliance with the emission standards specified in Condition 3.26 through the following actions:

(a) Keep a maintenance plan;

(b) Maintain records of conducted maintenance; and

(c) Maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions (to the extent practicable).

(Ref.: 40 CFR 4243(a)(2)(i); Subpart JJJJ)

SECTION 6. REPORTING REQUIREMENTS

General Reporting Requirements:

(a) The permittee shall report all deviations from permit requirements (including those attributable to upsets), the probable cause of such deviations, and any corrective actions or preventive measures taken. The report shall be made within five (5) working days of the time the deviation began.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B(11).)

(b) Beginning upon issuance of this permit and lasting until issuance of the applicable operating permit (and unless otherwise specified herein), the permittee shall submit a report for any required monitoring in Section 6 of this permit by July 31 and January 31 of each calendar year for the preceding six-month period. All instances of deviations from permit requirements must be clearly identified in such reports and all required reports must be certified by a responsible official consistent with Mississippi Administrative Code, Title 11, Part 2, Chapter 2, Rule 2.1.C.

Where no monitoring data is required to be reported and/or there are no deviations to report, the report shall contain the appropriate negative declaration.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.9.)

(c) Any document required by this permit to be submitted to the MDEQ shall contain a certification signed by a responsible official stating that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B(11).)

Specific Reporting Requirements:

Emission Point(s)	Applicable Requirement	Condition Number	Reporting Requirement
AA-000	11 Miss Admin. Code Pt. 2, R. 2.2.B(11).	6.2	Submit a Semi-Annual Monitoring Report (SMR)t
	11 Miss. Admin. Code Pt. 2, R. 2.2.B.(11) and 2.6.B.(5).	6.3	Submit Performance Testing Protocol Submit 10-Day Notification of Performance Testing Event
	11 Miss. Admin. Code Pt. 2, R. 2.2.B(11) and 2.6.B(6).	6.4	Submit Performance Test Results and Additional Information
AA-201	40 CFR 63.11529(c); Subpart YYYYYY	6.5	Submit an Annual Certification of Compliance on Visible Emissions / Opacity Testing

Emission Point(s)	Applicable Requirement	Condition Number	Reporting Requirement
AA-201	40 CFR 60.264(b); Subpart Z	6.6	Submit a SMR on Excess Opacity
	40 CFR 60.264(c); Subpart Z	6.7	Notify the MDEQ About Any Product Change
	11 Miss Admin. Code Pt. 2, R. 2.2.B(11).	6.8	Submit a SMR on NO_X, SO_2, and CO Excess Emissions
		6.9	Submit the Results of Each CEMS-Related Audit
		6.10	Notify the MDEQ About CEMS Malfunction / Non-Operation

6.2 For Emission Point AA-000 (Facility-Wide), the permittee shall submit a semi-annual monitoring report (SMR) in accordance with Condition 6.1(b) that details the following information:

(a) The total emission of each individual HAP and all combined HAPs in tons from all sources based on both a monthly and rolling 12-month total basis;

(b) The total throughput (in tons) of each raw material utilized to produce silicon;

(c) Any maintenance action(s) performed on an air pollution control device and any periods of time (including date and duration) in which a control device malfunctioned;

(d) A summary on any revision(s) made to the "Fugitive Dust Control Plan" and/or the "Emission Reduction Operating Plan";

(e) The total emission of GHG (as CO_2e) from both submerged arc furnaces on both a monthly and rolling 12-month total basis;

(f) Any occurrence in which a required visible emission evaluation (VEE) was not conducted and an explanation as to why it was not performed; and

(g) The results and opacity data from each evaluation that demonstrates compliance with opacity standard specified in Condition 3.7(a) (as applicable); and

(h) The hours of operation for each emergency engine (including a summary on how many hours are spent for emergency operation, what classified the operation as an emergency situation, how many hours are spent for non-emergency operation, and the circumstance(s) for non-emergency operation);

(Ref.: 11 Miss Admin. Code Pt. 2, R. 2.2.B(11).)

6.3 For Emission Point AA-000 (Facility-Wide), the permittee shall submit a written protocol for any performance testing required herein that details the procedures and test methods to be implemented during the actual testing event no later than thirty (30) days prior to the intended testing date.

The permittee shall notify the MDEQ in writing at least ten (10) days prior to the intended testing date so that a representative from the MDEQ may be afforded the opportunity to observe the stack testing.

If deemed necessary by the MDEQ, a conference may be required prior to the intended testing date to discuss the proposed test methods and procedures outlined in the performance testing protocol.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.2.B.(11) and 2.6.B.(5).).)

6.4 For Emission Point AA-000 (Entire Facility), the permittee shall submit the results for any conducted performance test no later than sixty (60) days after the actual testing event. The report, at a minimum, shall include the information specified in Condition 1.26(c) and the following site-specific information (as applicable):

(a) The average furnace power input;

(b) The total quantity (in tons) of each raw material charged into the submerged arc furnaces during the shift in which a performance test is conducted;

(c) The time and duration of each tapping period that occurs during a performance test; and

(d) The average volumetric flow rate through each fan / ducted hood for a capture system.

(Ref.: 11 Miss. Admin. Code Pt.2, R. 2.2.B(11) and 2.6.B(6).)

6.5 For Emission Point AA-201 (Facility-Wide), the permittee shall submit an annual certification of compliance no later than January 31 of each calendar year for the previous calendar year that details the following information (as applicable):

(a) The results of any daily or weekly visual monitoring events required by Condition 5.8;

(b) The results of any required follow-up Method 22 if visible emissions are observed during either daily or weekly visual monitoring; and

(c) The result of each Method 22 test or Method 9 test required by Conditions 5.9 and 5.10.

(Ref.: 40 CFR 63.11529(c); Subpart YYYYYY)

6.6 For Emission Point AA-201, the permittee shall submit a semi-annual monitoring report (SMR) in accordance with Condition 6.1(b) that details all six-minute periods in which the average opacity is equal to / greater than fifteen (15) percent. Additionally, the report shall include all applicable information outlined in 40 CFR 60.7(c) and (d), Subpart A.

(Ref.: 40 CFR 60.264(b); Subpart Z)

6.7 For Emission Point AA-201, the permittee shall submit a written report to the MDEQ on any product change no later than thirty (30) days after implementation of the product change.

For the purpose of this permit, a "product change" means any change in the composition of the furnace charge that would cause the SAF to become subject to a different mass standard applicable under Subpart Z.

(Ref.: 40 CFR 60.264(c); Subpart Z)

6.8 For Emission Point AA-201, the permittee shall submit a semi-annual monitoring report (SMR) in accordance with Condition 6.1(b) that details excess emissions and the performance of the CEMS in accordance with 40 CFR 60.7(c) and (d), Subpart A.

(Ref.: 11 Miss Admin. Code Pt. 2, R. 2.2.B(11).)

6.9 For Emission Point AA-201, the permittee shall submit the results of each RAA (or RATA) and CGA required by Condition 5.18 no later than sixty (60) days after completion of the audit.

(Ref.: 11 Miss Admin. Code Pt. 2, R. 2.2.B(11).)

6.10 For Emission Point AA-201, the permittee shall notify the MDEQ in writing on the CEMS malfunctioning or becoming non-operational such that monitoring data for NO_X, SO_2, and CO emissions cannot be collected. This notification shall be submitted no later than ten (10) days after the initial discovery of the failure.

(Ref.: 11 Miss Admin. Code Pt. 2, R. 2.2.B(11).)