STATE OF MISSISSIPPI
AIR POLLUTION CONTROL
TITLE V PERMIT

TO OPERATE AIR EMISSIONS EQUIPMENT

THIS CERTIFIES THAT

Mueller Casting Company, Inc. – A.I. 1503
Mueller Copper Tube Company, Inc. – A.I. 1915
(Mueller Casting & Copper Tube Products)
400 Mueller Road
Fulton, Itawamba County, Mississippi

has been granted permission to operate air emissions equipment in accordance with emission limitations, monitoring requirements and conditions set forth herein. This permit is issued in accordance with Title V of the Federal Clean Air Act (42 U.S.C.A. § 7401 - 7671) and 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.

Permit Issued: January 30, 2017

Effective Date: As specified herein.

MISSISSIPPI ENVIRONMENTAL QUALITY PERMIT BOARD

Krystal Rudolph

AUTHORIZED SIGNATURE
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

Modified: APR 30 2019

Expires: December 31, 2021 **Permit No.: 1240-00012**

TABLE OF CONTENTS

SECTION 1. GENERAL CONDITIONS

1.1 The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Federal Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A.(6)(a).)

1.2 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 this permit.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A.(6)(b).)

1.3 This permit and/or any part thereof may be modified, revoked, reopened, and reissued, or terminated for cause. 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. 6.3.A.(6)(c).)

1.4 Prior to its expiration, this permit may be reopened in accordance with the provisions listed below.

(a) This permit shall be reopened and revised under any of the following circumstances:

(1) Additional applicable requirements under the Federal Act become applicable to a major Title V source with a remaining permit term of three (3) or more years. Such a reopening shall be completed no later than eighteen (18) months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended.

(2) Additional requirements (including excess emissions requirements) become applicable to an affected source under the acid rain program. Upon approval by the Administrator, excess emissions offset plans shall be deemed to be incorporated into the permit.

(3) The Permit Board or EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emission standards or other terms or conditions of the permit.

(4) The Administrator or the Permit Board determines that the permit must be

revised or revoked to assure compliance with the applicable requirements.

(b) Proceedings to reopen and issue this permit shall follow the same procedures as apply to initial permit issuance and shall only affect those parts of the permit for which cause to reopen exists. Such reopening shall be made as expeditiously as practicable.

(c) Reopenings shall not be initiated before a notice of such intent is provided to the Title V source by the MDEQ at least thirty (30) days in advance of the date that the permit is to be reopened, except that the Permit Board may provide a shorter time period in the case of an emergency.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.4.G.)

1.5 The permittee shall furnish to the 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 permittee or, for information to be confidential, the permittee shall furnish such records to 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. 6.3.A.(6)(e).)

1.6 This permit does not convey any property rights of any sort, or any exclusive privilege.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A.(6)(d).)

1.7 The provisions of this permit are severable. If any provision of this permit, or the application of any provision of this 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. 6.3.A.(5).)

1.8 The permittee shall pay to the MDEQ an annual permit fee. The amount of fee shall be determined each year based on the provisions of regulated pollutants for fee purposes and the fee schedule specified in the Commission on Environmental Quality's order which shall be issued in accordance with the procedure outlined in Regulation 11 Miss. Admin. Code Pt. 2, Ch. 6., "*Air Emissions Operating Permit Regulations for Purposes of Title V of the Federal Clean Air Act*".

(a) For purposes of fee assessment and collection, the permittee shall elect for actual or allowable emissions to be used in determining the annual quantity of emissions unless the Commission determines by order that the method chosen by the applicant for calculating actual emissions fails to reasonably represent actual

emissions. Actual emissions shall be calculated using emission monitoring data or direct emissions measurements for the pollutant(s); mass balance calculations such as the amounts of the pollutant(s) entering and leaving process equipment and where mass balance calculations can be supported by direct measurement of process parameters, such direct measurement data shall be supplied; published emission factors such as those relating release quantities to throughput or equipment type (e.g. air emission factors); or other approaches such as engineering calculations (e.g. estimating volatilization using published mathematical formulas) or best engineering judgments where such judgments are derived from process and/or emission data which supports the estimates of maximum actual emission.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.6.A.(2).)

(b) If the Commission determines that there is not sufficient information available on a facility's emissions, the determination of the fee shall be based upon the permitted allowable emissions until such time as an adequate determination of actual emissions is made. Such determination may be made anytime within one year of the submittal of actual emissions data by the permittee.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.6.A(2).)

(c) If at any time within the year the Commission determines that the information submitted by the permittee on actual emissions is insufficient or incorrect, the permittee will be notified of the deficiencies and the adjusted fee schedule. Past due fees from the adjusted fee schedule will be paid on the next scheduled quarterly payment time.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.6.D.(2).)

(d) The fee shall be due September 1st of each year. By July 1st of each year, the permittee shall submit an inventory of emissions for the previous year on which the fee is to be assessed. The permittee may elect a quarterly payment method of four (4) equal payments; notification of the election of quarterly payments must be made to the DEQ by the first payment date of September 1st. The permittee shall be liable for penalty as prescribed by State Law for failure to pay the fee or quarterly portion thereof by the date due.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.6.D.)

(e) If in disagreement with the calculation or applicability of the Title V permit fee, the permittee may petition the Commission in writing for a hearing in accordance with State Law. Any disputed portion of the fee for which a hearing has been requested will not incur any penalty or interest from and after the receipt by the Commission of the hearing petition.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.6.C.)

1.9 No permit revision shall be required under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for in this permit.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A.(8).)

1.10 Any document required by this permit to be submitted to the MDEQ shall contain a certification by a responsible official that states 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. 6.2.E.)

1.11 The permittee shall allow the MDEQ, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to perform the following:

(a) Enter upon the permittee's premises where a Title V source is located or emissions-related activity is conducted, or where records must be kept under the conditions of this permit;

(b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

(c) Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and

(d) As authorized by the Federal Act, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the permit or applicable requirements.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.C.(2).)

1.12 Except as otherwise specified or limited herein, the permittee shall have necessary sampling ports and ease of accessibility for any new air pollution control equipment, obtained after May 8, 1970, and vented to the atmosphere.

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

1.13 Except as otherwise specified or limited herein, the permittee shall provide the necessary sampling ports and ease of accessibility when deemed necessary by the Permit Board for air pollution control equipment that was in existence prior to May 8, 1970.

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

1.14 Compliance with the conditions of this permit shall be deemed compliance with any applicable requirements as of the date of permit issuance where such applicable requirements are included and are specifically identified in the permit or where the permit contains a determination, or summary thereof, by the Permit Board that requirements specifically identified previously are not applicable to the source.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.F.(1).)

1.15 Nothing in this permit shall alter or affect the following:

(a) The provisions of Section 303 of the Federal Act (emergency orders), including the authority of the Administrator under that section;

(b) The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance;

(c) The applicable requirements of the acid rain program, consistent with Section 408(a) of the Federal Act.

(d) The ability of EPA to obtain information from a source pursuant to Section 114 of the Federal Act.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.F.(2).)

1.16 The permittee shall comply with the requirement to register a Risk Management Plan if permittee's facility is required pursuant to Section 112(r) of the Act to register such a plan.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.H.)

1.17 Expiration of this permit terminates the permittee's right to operate unless a timely and complete renewal application has been submitted. A timely application is one which is submitted at least six (6) months prior to expiration of the Title V permit. If the permittee submits a timely and complete application, the failure to have a Title V permit is not a violation of regulations until the Permit Board takes final action on the permit application. This protection shall cease to apply if, subsequent to the completeness determination, the permittee fails to submit by the deadline specified in writing by the MDEQ any additional information identified as being needed to process the application.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.4.C.(2)., R. 6.4.B., and R. 6.2.A.(1)(c).)

1.18 The permittee is authorized to make changes within their facility without requiring a permit revision (ref: Section 502(b)(10) of the Act) if:

(a) The changes are not modifications under any provision of Title I of the Act;

(b) The changes do not exceed the emissions allowable under this permit;

(c) The permittee provides the Administrator and the Department with written notification in advance of the proposed changes (at least seven (7) days, or such other time frame as provided in other regulations for emergencies) and the notification includes:

(1) A brief description of the change(s);

(2) The date on which the change will occur;

(3) Any change in emissions; and

(4) Any permit term or condition that is no longer applicable as a result of the change;

(d) The permit shield shall not apply to any Section 502(b)(10) change.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.4.F.(1).)

1.19 Should the Executive Director of the Mississippi Department of Environmental Quality (MDEQ) declare an Air Pollution Emergency Episode, the permittee will be required to operate in accordance with the permittee's previously approved Emissions Reduction Schedule or, in the absence of an approved schedule, with the appropriate requirements specified in 11 Miss. Admin. Code Pt. 2, Ch. 3., "*Regulations for the Prevention of Air Pollution Emergency Episodes*" for the level of emergency declared.

(Ref.: 11 Miss. Admin. Code Pt. 2, Ch. 3.)

1.20 Except as otherwise provided herein, a modification of the facility may require a Permit to Construct in accordance with the provisions of Regulation 11 Miss. Admin. Code Pt. 2, Ch. 2., "*Permit Regulations for the Construction and/or Operation of Air Emissions Equipment*", and may require modification of this permit in accordance with Regulation 11 Miss. Admin. Code Pt. 2, Ch. 6., "*Air Emissions Operating Permit Regulations for the Purposes of Title V of the Federal Clean Air Act*". Modification is defined as "*any physical change in or change in the method of operation of a facility which increases the actual emissions or the potential uncontrolled emissions of any air pollutant subject to regulation under the Federal Act emitted into the atmosphere by that facility or which results in the emission of any air pollutant subject to regulation under the Federal Act into the atmosphere not previously emitted*". A physical change or change in the method of operation shall not include:

(a) Routine maintenance, repair, and replacement;

(b) Use of an alternative fuel or raw material by reason of an order under Sections 2 (a) and (b) of the Federal Energy Supply and Environmental Coordination Act of 1974 (or any superseding legislation) or by reason of a natural gas curtailment plan pursuant to the Federal Power Act;

(c) Use of an alternative fuel by reason of an order or rule under Section 125 of the Federal Act;

(d) Use of an alternative fuel or raw material by a stationary source which:

(1) The source was capable of accommodating before January 6, 1975, unless such change would be prohibited under any federally enforceable permit condition which was established after January 6, 1975, pursuant to 40 CFR 52.21 or under regulations approved pursuant to 40 CFR 51, Subpart I, or 40 CFR 51.166; or

(2) The source is approved to use under any permit issued under 40 CFR 52.21 or under regulations approved pursuant to 40 CFR Part 51, Subpart I, or 40 CFR 51.166.

(e) An increase in the hours of operation or in the production rate unless such change would be prohibited under any federally enforceable permit condition which was established after January 6, 1975, pursuant to 40 CFR 52.21 or under regulations approved pursuant to 40 CFR 51, Subpart I or 40 CFR 51.166; or

(f) Any change in ownership of the stationary source.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 2.1.C.(15).)

1.21 Any change in ownership or operational control must be approved by the Permit Board.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.4.D(4).)

1.22 This permit is a Federally approved operating permit under Title V of the Federal Clean Air Act as amended in 1990. All terms and conditions, including any designed to limit the source's potential to emit, are enforceable by the Administrator and citizens under the Federal Act as well as the Commission.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.B.(1).)

1.23 Except as otherwise specified or limited herein, the open burning of residential, commercial, institutional, or industrial solid waste, is prohibited. This prohibition does not apply to infrequent burning of agricultural wastes in the field, silvi-cultural wastes for forest management purposes, land-clearing debris, debris from emergency clean-up operations, and ordnance. Open burning of land-clearing debris must not use starter or

auxiliary fuels which cause excessive smoke (rubber tires, plastics, etc.); must not be performed if prohibited by local ordinances; must not cause a traffic hazard; must not take place where there is a High Fire Danger Alert declared by the Mississippi Forestry Commission or Emergency Air Pollution Episode Alert imposed by the Executive Director and must meet the following buffer zones.

(a) Open burning without a forced-draft air system must not occur within five hundred (500) yards of an occupied dwelling.

(b) Open burning utilizing a forced-draft air system on all fires to improve the combustion rate and reduce smoke may be done within 500 yards of but not within fifty (50) yards of an occupied dwelling.

(c) Burning must not occur within 500 yards of commercial airport property, private air fields, or marked off-runway aircraft approach corridors unless written approval to conduct burning is secured from the proper airport authority, owner or operator.

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

1.24 Except as otherwise specified herein, the permittee shall be subject to the following provision with respect to emergencies:

(a) Except as otherwise specified herein, an "*emergency*" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

(b) An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if the conditions specified in (c) following are met.

(c) The affirmative defense of emergency shall be demonstrated through properly signed contemporaneous operating logs, or other relevant evidence that include information as follows:

(1) An emergency occurred and that the permittee can identify the cause(s) of the emergency;

(2) The permitted facility was at the time being properly operated;

(3) During the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and

(4) the permittee submitted notice of the emergency to the DEQ within two (2) working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

(d) In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.

(e) This provision is in addition to any emergency or upset provision contained in any applicable requirement specified elsewhere herein.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.G.)

1.25 Except as otherwise specified herein, the permittee shall be subject to the following provisions with respect to upsets, start-ups, 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 startups and shutdowns unless source specific emission limitations or work practice standards for start-ups 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 this Regulation 11 Miss. Admin. Code, Pt. 2, Ch. 1, the Department will consider establishing source specific emission limitations or work practice standards for startups and shutdowns. Source specific emission limitations or work practice standards established for startups and shutdowns are subject to the requirements prescribed in 11 Miss. Admin. Code Pt. 2, R. 1.10.B.(2)(a) through (e).

(3) Where an upset as defined in Rule 1.2 occurs during startup or shutdown, see the upset requirements above.

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

1.26 The permittee shall comply with all applicable standards for demolition and renovation activities pursuant to the requirements of 40 CFR Part 61, Subpart M, as adopted by reference in Regulation 11 Miss. Admin. Code Pt. 2, R. 1.8. The permittee shall not be required to obtain a modification of this permit in order to perform the referenced activities.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.8.)

SECTION 2. EMISSION POINTS & POLLUTION CONTROL DEVICES

EMISSION POINT	DESCRIPTION
AA-000	Facility-Wide [Mueller Casting Company, Inc. – A.I. 1503; Mueller Copper Tube Company, Inc. (Mueller Casting & Copper Tube Products) – A.I. 1915]
AA-100	**Copper Casting Operations (Mueller Casting Company, Inc.)**
AA-001	47.38 MMBTU / Hour Natural Gas-Fired Shaft Furnace [used to melt copper scrap and cathodes]
AA-002b	20 MMBTU / Hour Natural Gas-Fired Recuperative Thermal Oxidizer (RTO) [receives emissions from the Shaft Furnace].
AA-010	36 MMBTU / Hour Natural Gas-Fired Melt Furnace [used to melt copper scrap and cathodes]
AA-011	6.6 MMBTU / Hour Natural Gas-Fired Thermal Oxidizer [receives emissions from the Melt Furnace]
AA-012	Melt Furnace Baghouse No. 1
AA-013	Melt Furnace Baghouse No. 2
AA-014	7.2 MMBTU / Hour Natural Gas-Fired North Refining Furnace
AA-015	North Refining Furnace Baghouse
AA-016	7.2 MMBTU / Hour Natural Gas-Fired South Refining Furnace
AA-017	South Refining Furnace Baghouse
AA-040	1250 kW Diesel Fuel-Fired Emergency Generator Engine [manufactured in 1998]
AA-051	Three (3) Cooling Towers [equipped with mist eliminators]
AA-054	0.23 MMBTU / Hour Propane-Fired SMS MEER Carbon Monoxide (CO) Atmosphere Generator

EMISSION POINT	DESCRIPTION
AB-100	**Copper Tube Operations (Mueller Copper Tube Company, Inc. or Mueller Casting &Copper Tube Products)**
AB-004	10 MMBTU / Hour Natural Gas-Fired Billet Furnace No. 1
AB-005	10 MMBTU / Hour Natural Gas-Fired Billet Furnace No. 2
AB-009	Solvent Cleaning Operations [includes degreasing operations in the maintenance shop, the usage of all non-halogenated solvent cleaners, storage vessels all non-halogenated solvent cleaners, and distribution points facility-wide]
AB-010	Cascade Draw Lines No. 1 and No. 2 [includes four (4) copper tube drawing machines per line – Eight (8) in Total]
AB-011	Printing Operations [includes copper tube printing units]
AB-013	13.65 MMBTU / Hour Natural Gas-Fired Billet Furnace No. 3
AB-017	10.6 MMBTU / Hour Natural Gas-Fired Billet Furnace No. 4

SECTION 3. EMISSION LIMITATIONS & STANDARDS

A. FACILITY-WIDE EMISSION LIMITATIONS & STANDARDS

3.A.1 Except as otherwise specified or limited herein, the permittee shall not cause, permit, or allow the emission of smoke from a point source into the open air from any manufacturing, industrial, commercial or waste disposal process which exceeds forty percent (40%) opacity subject to the exceptions provided in Parts (a) & (b):

(a) Start-up operations may produce emissions which exceed 40% opacity for up to fifteen (15) minutes per startup in any one (1) hour and not to exceed three (3) start-ups per stack in any twenty-four (24) hour period.

(b) Emissions resulting from soot blowing operations (i.e. ash removal) shall be permitted provided such emissions do not exceed sixty percent (60%) opacity, and provided further that the aggregate duration of such emissions during any 24-hour period does not exceed ten (10) minutes per billion BTU gross heating value of fuel in any 1 hour.

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

3.A.2 Except as otherwise specified or limited herein, the permittee shall not cause, allow, or permit the discharge into the ambient air from any point source or emissions, any air contaminant of such opacity as to obscure an observer's view to a degree in excess of forty percent (40%) opacity, equivalent to that provided in Condition 3.A.1. This shall not apply to vision obscuration caused by uncombined water droplets..

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

B. EMISSION POINT SPECIFIC EMISSION LIMITATIONS & STANDARDS

Emission Point(s)	Applicable Requirement(s)	Condition Number	Pollutant(s) / Parameter(s)	Limit(s) / Standard(s)
AA-000	Federally Enforceable Limit Established in Title V permit Issued on February 25, 2002 11 Miss. Admin. Code Pt. 2, R. 6.3.A.(1).	3.B.1	Hours of Operation	8,568 hours / year
		3.B.2	HAPs	Individual: 9 tpy Combined: 24 tpy
		3.B.3	VOC-HAPs	Individual: 8.90 tpy Combined: 16.30 tpy
AA-001 AA-002b AA-010 AA-011 AA-014 AA-016 AA-054 AB-004 AB-005 AB-013 AB-017	11 Miss. Admin. Code Pt. 2, R. 1.4.A.(1).	3.B.4	SO_2	4.8 pounds / MMBTU
AA-040 AB-004 AB-005 AB-013 AB-017	11 Miss. Admin. Code Pt. 2, R. 1.3.D.(1)(b).	3.B.5	PM (*filterable only*)	$E = 0.8808 (I^{-0.1667})$, or as otherwise limited by facility modification restrictions
Copper Casting Operations				
AA-100	11 Miss. Admin. Code Pt. 2, R. 1.3.F.(1).	3.B.6	PM (*filterable only*)	$E = 4.1 (p^{0.67})$, or as otherwise limited by facility modification restrictions
AA-001 AA-002b AA-010 AA-011 AA-012 AA-013	40 CFR Part 64 – Compliance Assurance Monitoring 40 CFR 64.2(a)	3.B.7	CAM	Applicability
AA-001 AA-002b	PSD Permit to Construct Issued on September 28, 2001	3.B.8	PM / PM_{10} (*filterable only*)	12.66 pounds / hour 55.45 tpy

Emission Point(s)	Applicable Requirement(s)	Condition Number	Pollutant(s) / Parameter(s)	Limit(s) / Standard(s)
AA-001 AA-002b	PSD Permit to Construct Issued on September 28, 2001	3.B.9	CO	12.91 pounds / hour 56.55 tpy
		3.B.10		Emission Point AA-001 shall not operate unless Emission Point AA-002b is in operation
	PSD Permit to Construct Issued on September 28, 2001 Title V Operating Permit Issued on February 7, 2007; Modified on November 10, 2010	3.B.11		Maintain minimum 0.3-second retention time and hourly average >1,400 °F operating conditions in RTO
AA-010 AA-011 AA-012 AA-013	PSD Permit to Construct Issued on September 28, 2001	3.B.12	PM / PM_{10} (*filterable only*)	7.65 pounds / hour 33.51 tpy
		3.B.13	CO	29.58 pounds / hour 129.56 tpy
		3.B.14	CO PM / PM_{10}	Emission Point AA-010 shall not operate unless Emission Points AA-011, AA-012, and AA-013 are in operation
	PSD Permit to Construct Issued on September 28, 2001 Title V Operating Permit Issued on February 7, 2007; Modified on November 10, 2010	3.B.15		RTO must be operated at a minimum of 0.3-second retention time and hourly average temperature > 1400 ^{o}F Pressure drop across the baghouses shall be measured and must not be less than one (1) inch of water
AA-014 AA-015	PSD Permit to Construct Issued on September 28, 2001	3.B.16	PM / PM_{10} (*filterable only*)	1.93 pounds / hour 8.45 tpy Pressure drop across the baghouses shall be measured and must not be less than one (1) inch of water

Emission Point(s)	Applicable Requirement(s)	Condition Number	Pollutant(s) / Parameter(s)	Limit(s) / Standard(s)
AA-016 AA-017	PSD Permit to Construct Issued on September 28, 2001	3.B.17	PM / PM_{10} (*filterable only*)	1.93 pounds / hour 8.45 tpy Pressure drop across the baghouses shall be measured and must not be less than one (1) inch of water
AA-040	40 CFR Part 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines 40 CFR 63.6585(a),(c), and (f)(2); Subpart ZZZZ	3.B.18	Exhaust Emissions	Applicability
	40 CFR 63.6640(f)(1 – 4); Subpart ZZZZ	3.B.19		Definition of emergency engine
	40 CFR 63.6605(a) and (b); Subpart ZZZZ	3.B.20		Remain in compliance with all operating limitations at all times Operate the engine in a manner consistent with good air pollution control practices
	PSD Permit to Construct Issued on September 28, 2001	3.B.21	NO_X	Timing set to 4 degrees before top dead center
AA-054	11 Miss. Admin. Code Pt. 2, R. 1.3.D.(1)(a).	3.B.22	PM (*filterable only*)	0.6 pounds / MMBTU per hour, or as otherwise limited by facility modification restrictions
Copper Tube Operations				
AB-100	Federally Enforceable Limit Established in Title V Operating Permit Issued on February 25, 2002	3.B.23	VOCs	121.51 tpy
	11 Miss. Admin. Code Pt. 2, R. 1.3.F(1).	3.B.24	PM (*filterable only*)	$E = 4.1\ (p^{0.67})$, or as otherwise limited by facility modification restrictions

3.B.1 For Emission Point AA-000 (Facility-Wide), the permittee shall not exceed 8,568 hours of operation per year for any consecutive 12-month period on a rolling basis.

(Ref.: Title V Operating Permit Issued on February 25, 2002)
(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A.(1).)

3.B.2 For Emission Point AA-000 (Facility-Wide), the permittee shall limit the emission of hazardous air pollutants (HAPs) to no more than 9 tons per year (tpy) for any individual HAP and 24 tpy for all combined HAPs for any consecutive 12-month period on a rolling basis.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A.(1).)

3.B.3 For Emission Point AA-000 (Facility-Wide), the permittee shall limit the emission of volatile organic compound – hazardous air pollutants (VOC-HAPs) to no more than 8.90 tpy for any individual VOC-HAP and 16.30 tpy for all combined VOC-HAPs for any consecutive 12-month period on a rolling basis.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A.(1).)

3.B.4 For Emission Points AA-001, AA-002b, AA-010, AA-011, AA-014, AA-016, AA-054, AB-004, AB-005, AB-013, and AB-017, the permittee shall limit the emission of sulfur dioxide (SO_2) to no more than 4.8 pounds per million BTU (MMBTU).

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.4.A.(1).)

3.B.5 For Emission Points AA-040, AB-004, AB-005, AB-013, and AB-017, the permittee shall limit the emission rate of PM to no more than the emission rate determined by the following relationship:

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

where "*E*" is the emission rate in pounds per million BTU (MMBTU) per hour heat input and "*I*" is the heat input in MMBTU.

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

COPPER CASTING OPERATIONS

3.B.6 For Emission Point AA-100, the permittee shall limit the emissions of particulate matter (PM) to no more than the rate determined by the following relationship:

$$E = 4.1 \, (p^{0.67})$$

where "*E*" is the emission rate in pounds per hour and "*p*" is the weight of all copper

input into the casting process in tons per hour. The value for "*p*" does not include recycled process materials, which were accounted for upon initial introduction into the casting process.

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

3.B.7 For Emission Points AA-001, AA-002b, AA-010, AA-011, AA-012, and AA-013, the permittee is subject to and shall comply with all applicable requirements of 40 CFR Part 64 – Compliance Assurance Monitoring (CAM). The permittee shall comply with the CAM Plan contained in Appendix B of this permit.

(Ref.: 40 CFR 64.2(a))

3.B.8 For Emission Points AA-001 and AA-002b, the permittee shall limit the emission of particulate matter (PM) and the filterable portion of particulate matter less than 10 microns (µm) in diameter (PM_{10}) to no more than 12.66 pounds per hour and 55.45 tons per year (tpy), as determined by EPA Test Methods 1 through 5 in Appendix A of 40 CFR Part 60.

(Ref.: PSD Permit to Construct Issued on September 28, 2001)

3.B.9 For Emission Points AA-001 and AA-002b, the permittee shall limit the emission of carbon monoxide (CO) to no more than 12.91 pounds per hour and 56.55 tons per year (tpy), as determined by EPA Test Method 10 in Appendix A of 40 CFR Part 60.

(Ref.: PSD Permit to Construct Issued on September 28, 2001)

3.B.10 Emission Point AA-001 shall not operate unless Emission Point AA-002b is simultaneously operating in such a manner as to effectively control emissions generated by Emission Point AA-001.

(Ref.: PSD Permit to Construct Issued on September 28, 2001)

3.B.11 For Emission Point AA-002b, the permittee shall operate the recuperative thermal oxidizer (RTO) such that a minimum of 0.3 seconds retention time and hourly average temperature greater than 1,400 °F is maintained.

(Ref.: PSD Permit to Construct Issued on September 28, 2001)
(Ref.: Title V Operating Permit Issued on February 7, 2007; Modified on November 10, 2010)

3.B.12 For Emission Points AA-010, AA-011, AA-012, and AA-013, the permittee shall limit the emission of particulate matter (PM) and the filterable portion of particulate matter less than 10 microns (µm) in diameter (PM_{10}) to no more than 7.65 pounds per hour and 33.51 tons per year (tpy), as determined by EPA Test Methods 1 through 5 in

Appendix A of 40 CFR Part 60.

(Ref.: PSD Permit to Construct Issued on September 28, 2001)

3.B.13 For Emission Points AA-010, AA-011, AA-012, and AA-013, the permittee shall limit the emission of carbon monoxide (CO) to no more than 12.91 pounds per hour and 56.55 tons per year (tpy), as determined by EPA Test Method 10 in Appendix A of 40 CFR Part 60.

(Ref.: PSD Permit to Construct Issued on September 28, 2001)

3.B.14 Emission Point AA-010 shall not operate unless Emission Points AA-011, AA-012, and AA-013 are all simultaneously operating in such a manner as to effectively control emissions generated by Emission Point AA-010.

(Ref.: PSD Permit to Construct Issued on September 28, 2001)

3.B.15 For Emission Point AA-011, the permittee shall operate the thermal oxidizer such that a minimum of 0.3 seconds retention time and hourly average temperature greater than 1,400 °F is maintained.

For Emission Points AA-012 and AA-013, the permittee shall operate the two baghouses such that the pressure drop across each baghouse is no less than one (1) inch of water during operation.

(Ref.: PSD Permit to Construct Issued on September 28, 2001)
(Ref.: Title V Operating Permit Issued on February 7, 2007; Modified on November 10, 2010; 40 CFR 64.2(a))

3.B.16 For Emission Points AA-014 and AA-015, the permittee shall limit the emission of particulate matter (PM) and the filterable portion of particulate matter less than 10 microns (µm) in diameter (PM_{10}) to no more than 1.93 pounds per hour and 8.45 tons per year, as determined by EPA Test Methods 1 through 5 in Appendix A of 40 CFR Part 60.

Additionally, the permittee shall measure the pressure drop across each baghouse. The measured pressure drop shall not be below one (1) inch of water at any time during operation.

(Ref.: PSD Permit to Construct Issued on September 28, 2001)

3.B.17 For Emission Points AA-016 and AA-017, the permittee shall limit the emission of particulate matter (PM) and the filterable portion of particulate matter less than 10 microns (µm) in diameter (PM_{10}) to no more than 1.93 pounds per hour and 8.45 tons per year (tpy), as determined by EPA Test Methods 1 through 5 in Appendix A of 40

CFR Part 60.

Additionally, the permittee shall measure the pressure drop across each baghouse. The measured pressure drop shall not be below one (1) inch of water at any time during operation.

(Ref.: PSD Permit to Construct Issued on September 28, 2001)

3.B.18 Emission Point AA-040 is subject to and shall comply with all applicable requirements of 40 CFR Part 63, Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.

(Ref.: 40 CFR 63.6585(a), (c), and (f)(2); Subpart ZZZZ)

3.B.19 For Emission Point AA-040, the permittee shall operate the emergency engine according to Parts (a) through (c) below. In order for the engine to be considered an emergency engine under Subpart ZZZZ, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for fifty (50) hours per year, as described in Parts (a) through (c) below, is prohibited. If the permittee does not operate the engine according to these requirements, the engine will not be considered an emergency engine under Subpart ZZZZ and must meet all requirements for a non-emergency engine:

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

(b) The permittee may operate the engine for any combination of the purposes specified as follows for a maximum of one hundred (100) hours per calendar year provided that the tests are recommended by Federal, State or Local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The permittee may petition the MDEQ for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the permittee maintains records indicating that Federal, State, or Local standards require maintenance and testing of the engine for more than 100 hours per calendar year.

(c) The emergency engine may be operated 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 and emergency demand response provided in Part (b) of this condition. The 50 hours per 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 63.6640(f)(1 – 4); Subpart ZZZZ)

3.B.20 For Emission Point AA-040, the permittee must be in compliance with the operating limitations and other requirements outlined in this permit at all times. The permittee must operate and maintain this engine, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions.

The general duty to minimize emissions does not require the permittee to make any further efforts to reduce emissions if levels required by this permit have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the MDEQ which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

(Ref.: 40 CFR 63.6605(a) and (b); Subpart ZZZZ)

3.B.21 For Emission Point AA-040, in order to reduce the emission of nitrogen oxides (NO_X), the permittee shall maintain and operate the engine such that the valve timing remains at four (4) degrees before top dead center.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A.(1).)

3.B.22 For Emission Point AA-054, the permittee shall limit the emission of particulate matter (PM – filterable only) to no more than 0.6 pounds per million BTU (MMBTU) per hour heat input.

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

COPPER TUBE OPERATIONS

3.B.23 For Emission Point AB-100, the permittee shall limit the emission of volatile organic compounds (VOCs) to no more than 121.51 tons per year (tpy) for any consecutive 12-month period on a rolling basis.

(Ref.: Title V Operating Permit Issued on February 25, 2002)

3.B.24 For Emission Point AB-100, the permittee shall limit the emission of particulate matter (PM) to no more than the rate determined by the following relationship:

$$E = 4.1\ (p^{0.67})$$

where "*E*" is the emission rate in pounds per hour and "*p*" is the weight of all copper billets input into the copper tube process in tons per hour. The value for "*p*" does not include recycled process materials which were accounted for upon initial introduction

into the casting process.

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

C. INSIGNIFICANT / TRIVIAL ACTIVITY EMISSION LIMITATIONS & STANDARDS

Applicable Requirement(s)	Condition Number	Pollutant(s) / Parameter(s)	Limit/Standard
11 Miss. Admin. Code Pt. 2, R. 1.3.D.(1)(a).	3.C.1	PM	0.6 pounds / MMBTU
11 Miss. Admin. Code Pt. 2, R. 1.4.A.(1).	3.C.2	SO_2	4.8 pounds / MMBTU

3.C.1 The maximum permissible emission of ash and/or particulate matter from fossil fuel burning installations of less than 10 million BTU (MMBTU) per hour heat input shall not exceed 0.6 pounds per million BTU per hour heat input.

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

3.C.2 The maximum discharge of sulfur oxides from any fuel burning installation in which the fuel is burned primarily to produce heat or power by indirect heat transfer shall not exceed 4.8 pounds (measured as sulfur dioxide or SO_2) per million BTU (MMBTU) heat input.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 1.4.A.(1).)

D. WORK PRACTICE STANDARDS

Emission Point(s)	Applicable Requirement	Condition Number	Pollutant(s) / Parameter(s)	Limit/Standard
AA-040	40 CFR 63.6625(e) and (h); Subpart ZZZZ	3.D.1	Exhaust Emissions	Operate and maintain the emergency engine and after-treatment control according to the manufacturer's emission-related written instructions Minimize the engine's time spent idling during startup and minimize the engine's startup period, not to exceed 30 minutes
	40 CFR 63.6603(a); Subpart ZZZZ – Table 2d	3.D.2		Maintenance Requirements
	40 CFR 63.6625(i); Subpart ZZZZ	3.D.3	Operational Flexibility	Oil Analysis Program Option Details
	40 CFR 63.6604(b); Subpart ZZZZ	3.D.4	Fuel Requirements	15 ppm Sulfur Content (Max.) 40 Cetane Index (Min.) or 35% Aromatic Content (Max. – by volume)

3.D.1 For Emission Point AA-040, the permittee shall operate and maintain the emergency engine and after-treatment controls according to the manufacturer's emission-related written instructions. Additionally, the permittee must minimize the engine's time spent at idle during startup and minimize the engine's start-up time to a period needed for appropriate and safe loading of the engine, not to exceed thirty (30) minutes.

(Ref.: 40 CFR 63.6625(e) and (h); Subpart ZZZZ)

3.D.2 For Emission Point AA-040, the permittee shall comply with the following requirements outlined in Parts (a) through (c) below:

(a) The oil and filter shall be changed every five hundred (500) hours of operation or annually, whichever comes first;

(b) The air cleaner shall be inspected every one thousand (1,000) hours of operation or annually, whichever comes first, and replaced as necessary;

(c) The hoses and belts shall be inspected every 500 hours of operation or annually, whichever comes first, and replaced as necessary.

(Ref.: 40 CFR 63.6603(a); Subpart ZZZZ – Table 2d)

3.D.3 For Emission Point AA-040, the permittee has the option of utilizing an oil analysis program in order to extend the specified oil change requirements specified in this section. The oil analysis must be performed at the same frequency specified for changing the oil in this section. The analysis program must at a minimum analyze the following parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows:

(a) Total Base Number is less than thirty percent (30%) of the Total Base Number of the oil when new;

(b) Viscosity of the oil has changed by more than twenty percent (20%) from the viscosity of the oil when new; or

(c) Percent water content (by volume) is greater than 0.5.

If all of these condemning limits are not exceeded, the permittee is not required to change the oil. If any of the limits are exceeded, the permittee must change the oil within two (2) business days of receiving the results of the analysis. If the engine is not in operation when the results of the analysis are received, the permittee must change the oil within 2 business days or before commencing operation, whichever is later.

The permittee must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.

(Ref.: 40 CFR 63.6625(i); Subpart ZZZZ)

3.D.4 For Emission Point AA-040, the permittee shall only use diesel fuel, which complies with the fuel requirements outlined below:

(a) A maximum sulfur content of 15 parts per million (ppm); and

(b) A minimum cetane index of 40 or a maximum aromatic content of 35 volume percent (vol. %).

(Ref.: 40 CFR 63.6604(b); Subpart ZZZZ)

SECTION 4. COMPLIANCE SCHEDULE

4.1 Unless otherwise specified herein, the permittee shall be in compliance with all requirements contained herein upon issuance of this permit.

4.2 Except as otherwise specified herein, the permittee shall submit to the Permit Board and to the Administrator of EPA Region IV a certification of compliance with permit terms and conditions, including emission limitations, standards, or work practices, by January 31st for the preceding calendar year. Each compliance certification shall include the following:

(a) The identification of each term or condition of the permit that is the basis of the certification;

(b) The compliance status;

(c) Whether compliance was continuous or intermittent;

(d) The method(s) used for determining the compliance status of the source, currently and over the applicable reporting period;

(e) Such other facts as may be specified as pertinent in specific conditions elsewhere in this permit.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.C.(5)(a), (c), and (d).)

SECTION 5. MONITORING, RECORDKEEPING & REPORTING REQUIREMENTS

A. GENERAL MONITORING, RECORDKEEPING AND REPORTING REQUIREMENTS

5.A.1 The permittee shall install, maintain, and operate equipment and/or institute procedures as necessary to perform the monitoring and recordkeeping specified below.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A.(3).)

5.A.2 In addition to the recordkeeping specified below, the permittee shall include with all records of required monitoring information the following:

(a) The date, place as defined in the permit, and time of sampling or measurements;

(b) The date(s) analyses were performed;

(c) The company or entity that performed the analyses;

(d) The analytical techniques or methods used;

(e) The results of such analyses; and

(f) The operating conditions existing at the time of sampling or measurement.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A.(3)(b)(1).)

5.A.3 Except where a longer duration is specified in an applicable requirement, the permittee shall retain records of all required monitoring data and support information for a period of at least five (5) years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records, all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A.(3)(b)(2).)

5.A.4 Except as otherwise specified herein, the permittee shall submit reports of any required monitoring by July 31st and January 31st 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 Regulation 11 Miss. Admin. Code Pt. 2, R. 6.2.E.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A.(3)(c)(1).)

5.A.5 Except as otherwise specified herein, 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. Said report shall be made within five (5) days of the time the deviation began.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A.(3)(c)(2).)

5.A.6 Except as otherwise specified herein, the permittee shall perform emissions sampling and analysis in accordance with EPA Test Methods and with any continuous emission monitoring requirements, if applicable. All test methods shall be those versions or their equivalents approved by the DEQ and the EPA.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A.(3).)

5.A.7 The permittee shall maintain records of any alterations, additions, or changes in equipment or operation.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A.(3).)

B. SPECIFIC MONITORING AND RECORDKEEPING REQUIREMENTS

Emission Point(s)	Applicable Requirement(s)	Condition Number	Pollutant(s) / Parameter(s)	Monitoring / Recordkeeping Requirement(s)
AA-000	11 Miss. Admin. Code Pt. 2, R. 6.3.A.(3).	5.B.1	Hours of Operation	Monthly records of hours of operation
		5.B.2	HAPs VOC-HAPs	Monitor and maintain records of HAP- and VOC-HAP-containing material usage
		5.B.3	SO_2	Maintain monthly records of the amount of natural gas / propane burned
AA-002b AA-012 AA-013 AA-015 AA-017	11 Miss. Admin. Code Pt. 2, R. 2.2.B.(10).	5.B.4	PM / PM_{10}	Stack Testing Requirements
AA-002b	11 Miss. Admin. Code Pt. 2, R. 2.2.B.(10).	5.B.5	CO	Initial Performance Testing
AA-002b AA-011	11 Miss. Admin. Code Pt. 2, R. 2.2.B.(10).	5.B.6	CO	Stack Testing Requirements
	11 Miss. Admin. Code Pt. 2, R. 6.3.A.(3) 40 CFR 64.3(a) and (b); 40 CFR 64.6; 40 CFR 64.7; 40 CFR 64.8	5.B.7	Temperature	Hourly average operating temperature readings
AA-012 AA-013 AA-015 AA-017	11 Miss. Admin. Code Pt. 2, R. 6.3.A.(3). 40 CFR 64.3(a) and (b); 40 CFR 64.6; 40 CFR 64.7; 40 CFR 64.8	5.B.8	Differential Pressure Drop	Daily pressure drop readings
AA-040	40 CFR 63.6625(f); Subpart ZZZZ	5.B.9	Exhaust Emissions	Install a non-resettable hour meter
	40 CFR 63.6640(a); Subpart ZZZZ – Table 6	5.B.10		Demonstration of Continuous Compliance

Emission Point(s)	Applicable Requirement(s)	Condition Number	Pollutant(s) / Parameter(s)	Monitoring / Recordkeeping Requirement(s)
AA-040	40 CFR 63.6655(f)(2); Subpart ZZZZ	5.B.11	Exhaust Emissions	Recordkeeping Requirements
	40 CFR 63.6655(a) and (d); Subpart ZZZZ	5.B.12		
AB-100	11 Miss. Admin. Code Pt. 2, R. 6.3.A.(3).	5.B.13	VOCs	Monitor and maintain records of VOC-containing material usage

5.B.1 For Emission Point AA-000 (Facility-Wide), the permittee shall monitor and maintain monthly records of the hours of operation based on a consecutive 12-month total on a rolling basis.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A.(3).)

5.B.2 For Emission Point AA-000 (Facility-Wide), in order to demonstrate compliance with the HAP and VOC-HAP limitations specified in Conditions 3.B.2 and 3.B.3, the permittee shall maintain sufficient records to document the identification of each process related ink, solvent, coating, adhesive, or any other process-related HAP-containing and/or VOC-HAP-containing material used based on a consecutive 12-month total on a rolling basis.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A.(3).)

5.B.3 For Emission Point AA-000 (Facility-Wide), the permittee shall monitor and maintain monthly records of the amount of natural gas and propane burned.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A.(3).)

5.B.4 For Emission Point AA-002b, in order to demonstrate compliance with the PM / PM_{10} limitation specified in Condition 3.B.8, the permittee shall perform stack testing at least once during the life of the permit.

The permittee shall perform the required stack testing within two (2) years following the issuance of this permit. The required stack testing shall be in accordance with EPA Test Methods 1 – 5 found in Appendix A of 40 CFR Part 60, and EPA Test Method 201 / 201A in conjunction with EPA Test Method 202 found in Appendix M of 40 CFR Part 51.

For Emission Points AA-012, AA-013, AA-015, and AA-017, in order to demonstrate compliance with the respective PM / PM_{10} limitations specified in Conditions 3.B.12, 3.B.16, and 3.B.17, the permittee shall perform stack testing within one hundred eighty

(180) days of restarting the equipment and biennially thereafter. The required stack testing shall be in accordance with EPA Reference Methods 1 – 5 found in Appendix A of 40 CFR Part 60, and EPA Test Method 201 / 201A in conjunction with EPA Test Method 202 found in Appendix M of 40 CFR Part 51.

For Emission Points AA-015 and AA-017, specifically, both emission points shall be tested during the initial stack testing after restarting. Following the initial stack testing after restarting the equipment, the permittee shall perform the biennial stack test on only one of the units and shall perform subsequent testing on the units in a rotating manner.

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

5.B.5 For Emission Point AA-002b, in order to demonstrate that the new recuperative thermal oxidizer (RTO) can adequately reduce the emissions of CO from Emission Point AA-001, the permittee shall perform an initial performance stack test in accordance with EPA Test Method 10 found in Appendix A of 40 CFR Part 60. This test shall be conducted within one hundred eighty (180) days of the issuance of this permit.

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

5.B.6 For Emission Point AA-002b, in order to demonstrate compliance with the CO limitation specified in Condition 3.B.9, the permittee shall perform stack testing within two (2) years of the issuance of this permit. If the results of the required stack test show that the CO emission rate is less than fifty percent (50%) of the specified emission limitation, no further stack testing shall be required for the life of the permit.

If the results of the required stack test show that the CO emission rate is greater than 50% of the specified emission limitation found, another stack test shall be conducted within two (2) years of the last test date. The required stack testing shall be in accordance with EPA Test Method 10 found in Appendix A of 40 CFR Part 60.

Additionally, in order to demonstrate that each unit can independently control the CO emissions generated by Emission Point AA-001, the permittee shall perform the required stack testing on each unit while operating independently of the other.

For Emission Point AA-011, in order to demonstrate compliance with the CO limitation in Condition 3.B.13, the permittee shall perform stack testing within one hundred eighty (180) days of restarting the equipment and biennially thereafter.

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

5.B.7 For Emission Points AA-002b and AA-011, in order to demonstrate compliance with the operating temperature requirements specified in Conditions 3.B.11 and 3.B.15, the permittee shall monitor and maintain records of the hourly average operating

temperature.

The permittee shall maintain records of all inspections and calibrations. Maintenance inspections shall be performed on a regular basis. Calibrations shall be performed annually. This shall serve as the demonstration of compliance for 40 CFR 64.3(a) and (b) as well as the specific Compliance Assurance Monitoring (CAM) Plan included in Appendix B.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A.(3).)
(Ref.: 40 CFR 64.3(a) and (b); 40 CFR 64.6; 40 CFR 64.7; 40 CFR 64.8)

5.B.8 For Emission Points AA-012, AA-013, AA-015, and AA-017, in order to demonstrate compliance with the differential pressure drop requirements specified in Conditions 3.B.15 through 3.B.17, the permittee shall monitor and maintain records of the pressure drop across each baghouse on a daily basis when in operation. If these units are not in operation, the daily records shall indicate so.

For Emission Points AA-012 and AA-013, specifically, the permittee shall also maintain records of all inspections and calibrations. Maintenance inspections shall be performed regularly. Calibrations shall be performed annually. Calibrations shall not be required if these units have not been in operation at any time within the past twelve (12) months.

If an excursion occurs [i.e. the differential pressure drop across the baghouse falls below one (1) inch of water], an EPA Method 9 test shall be performed. This shall serve as the demonstration of compliance for 40 CFR 64.3(a) and (b) as well as the specific Compliance Assurance Monitoring (CAM) Plan established by the permittee.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A.(3).)
(Ref.: 40 CFR 64.3(a) and (b); 40 CFR 64.6; 40 CFR 64.7; 40 CFR 64.8)

5.B.9 For Emission Point AA-040, the permittee shall install a non-resettable hour meter prior to the startup of the affected units.

(Ref.: 40 CFR 63.6625(f); Subpart ZZZZ)

5.B.10 For Emission Point AA-040, the permittee shall demonstrate continuous compliance by operating and maintaining the engine according to the manufacturer's emission-related operation and maintenance instructions.

(Ref.: 40 CFR 63.6640(a); Subpart ZZZZ – Table 6)

5.B.11 For Emission Point AA-040, the permittee shall keep records of the operation of the engine in emergency and non-emergency service that are recorded through the required non-resettable hour meter. The permittee must record the time of operation of the

engine and the reason the engine was in operation during that time.

(Ref.: 40 CFR 63.6655(f)(2); Subpart ZZZZ)

5.B.12 For Emission Point AA-040, the permittee must keep the records described by Parts (a) through (d) below:

(a) Records of the occurrence and duration of each malfunction of operation (i.e. process equipment) or the air pollution control and monitoring equipment.

(b) Records of performance tests and performance evaluations as required in 40 CFR 63.10(b)(2)(viii); Subpart A.

(c) Records of all required maintenance performed on the air pollution control and monitoring equipment.

(d) Records of actions taken during periods of malfunction to minimize emissions in accordance with Section 3.B. including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

(Ref.: 40 CFR 63.6655(a) and (d); Subpart ZZZZ)

5.B.13 For Emission Point AB-100 (Copper Tube Operations), in order to demonstrate compliance with the VOC limitation specified in Condition 3.B.23, the permittee shall maintain sufficient records to document the identification of each process-related ink, solvent, coating, adhesive, or any other process-related VOC-containing material used based on a 12-month consecutive total on a rolling basis.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A.(3).)

C. SPECIFIC REPORTING REQUIREMENTS

Emission Point(s)	Applicable Requirement(s)	Condition Number	Pollutant(s) / Parameter(s)	Reporting Requirement(s)
Entire Facility	11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(c)(2).	5.C.1	General Reporting	Reporting of Permit Deviations
	11 Miss. Admin. Code Pt. 2, R. 6.3.A(3)(c)(1).	5.C.2		Semiannual Reporting
	11 Miss. Admin. Code Pt. 2, R. 6.3.A(3).	5.C.3		Reporting of Stack Testing Protocol
AA-002b	11 Miss. Admin. Code Pt. 2, R. 6.3.A(3).	5.C.4	CO	Initial Performance Test Reporting
AA-002b AA-011 AA-012 AA-013 AA-015 AA-017	11 Miss. Admin. Code Pt. 2, R. 6.3.A(3).	5.C.5	PM / PM_{10} CO	Required Stack Test Reporting
AA-010 AA-011 AA-012 AA-013 AA-014 AA-015 AA-016 AA-017	11 Miss. Admin. Code Pt. 2, R. 6.3.A(3).	5.C.6	Special Reporting	Notification to the MDEQ that these units will be restarted

5.C.1 Except as otherwise specified herein, 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. Said report shall be made within five (5) days of the time the deviation began.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A.(3)(c)(2).)

5.C.2 For Emission Point AA-000 (Facility-Wide), unless otherwise specified herein, the permittee shall submit a summary of all required monitoring and recordkeeping every six (6) months. The summary shall include the number of hours during which the facility was in operation, hourly average temperature readings from the affected thermal oxidizers, and the daily pressure drop readings from the affected baghouses.

These reports shall be submitted by January 31st and July 31st for the preceding six-

month period. All instances of deviations from this permit's requirements shall be clearly identified in these reports and shall be certified by a responsible official consistent with Regulation 11 Miss. Admin. Code Pt. 2, R. 6.2.E.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A.(3)(c)(1).)

5.C.3 For Emission Point AA-000 (Facility-Wide), the permittee shall submit a written protocol for any required stack testing at least thirty (30) days prior to the intended test date(s) to ensure that all test methods and procedures are acceptable to the MDEQ.

The permittee shall also notify the MDEQ in writing at least ten (10) days prior to the intended test date(s) so that an official observer from the MDEQ may be afforded the opportunity to witness the test(s).

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A.(3).)

5.C.4 For Emission Point AA-002b, the permittee shall submit a report summarizing the results of the required initial performance stack testing. This report shall be submitted to the MDEQ within sixty (60) days of conducting the test.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A.(3).)

5.C.5 For Emission Point AA-002b, the permittee shall submit a report summarizing the results of the required stack testing for PM, PM_{10}, and CO. All stack testing reports shall be submitted to the MDEQ within sixty (60) days of conducting the test.

For Emission Points AA-011, AA-012, AA-013, AA-015, and AA-017, the permittee shall submit a report summarizing the results of the required stack testing for PM, PM_{10}, and CO, if the equipment was operating and a test performed. All stack testing reports shall be submitted to the MDEQ within 60 days of conducting the test.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A.(3).)

5.C.6 For Emission Points AA-010, AA-011, AA-012, AA-013, AA-014, AA-015, AA-016, and AA-017, in the event that the permittee wishes to restart any of these units, the permittee shall notify the MDEQ at least sixty (60) days prior to start-up.

(Ref.: 11 Miss. Admin. Code Pt. 2, R. 6.3.A.(3).)

SECTION 6. ALTERNATIVE OPERATING SCENARIOS

6.1 None permitted.

SECTION 7. TITLE VI REQUIREMENTS

The following are applicable or potentially applicable requirements originating from Title VI of the Clean Air Act – Stratospheric Ozone Protection. The full text of the referenced regulations may be found on-line at **http://www.ecfr.gov/** under Title 40, or DEQ shall provide a copy upon request from the permittee.

7.1 If the permittee produces, transforms, destroys, imports or exports a controlled substance or imports or exports a controlled product, the permittee shall comply with the applicable requirements of 40 CFR Part 82, Subpart A – Production and Consumption Controls.

7.2 If the permittee performs service on a motor vehicle for consideration when this service involves the refrigerant in the motor vehicle air conditioner (MVAC), the permittee shall comply with the applicable requirements of 40 CFR Part 82, Subpart B – Servicing of Motor Vehicle Air Conditioners.

7.3 The permittee shall comply with the applicable requirements of 40 CFR Part 82, Subpart E – The Labeling of Products Using Ozone-Depleting Substances, for the following containers and products:

(a) All containers in which a class I or class II substance is stored or transported;

(b) All products containing a class I substance;

(c) All products directly manufactured with a process that uses a class I substance, unless otherwise exempted by this subpart or, unless EPA determines for a particular product that there are no substitute products or manufacturing processes for such product that do not rely on the use of a class I substance, that reduce overall risk to human health and the environment, and that are currently or potentially available. If the EPA makes such a determination for a particular product, then the requirements of this subpart are effective for such product no later than January 1, 2015.

7.4 If the permittee performs any of the following activities, the permittee shall comply with the applicable requirements of 40 CFR Part 82, Subpart F – Recycling and Emissions Reduction:

(a) Servicing, maintaining, or repairing appliances;

(b) Disposing of appliances, including small appliances and motor vehicle air conditioners;

(c) Refrigerant reclaimers, technician certifying programs, appliance owners and operators, manufacturers of appliances, manufacturers of recycling and recovery equipment, approved recycling and recovery equipment testing organizations, persons selling class I or class II refrigerants or offering class I or class II refrigerants for sale, and persons purchasing class I or class II refrigerants.

7.5 The permittee shall be allowed to switch from any ozone-depleting substance to any acceptable alternative that is listed in the Significant New Alternatives Policy (SNAP) program promulgated pursuant to 40 CFR Part 82, Subpart G – Significant New Alternatives Policy Program. The permittee shall also comply with any use conditions for the acceptable alternative substance.

7.6 If the permittee performs any of the following activities, the permittee shall comply with the applicable requirements of 40 CFR Part 82, Subpart H – Halon Emissions Reduction:

(a) Any person testing, servicing, maintaining, repairing, or disposing of equipment that contains halons or using such equipment during technician training;

(b) Any person disposing of halons;

(c) Manufacturers of halon blends; or

(d) Organizations that employ technicians who service halon-containing equipment.

APPENDIX A
List of Abbreviations Used In this Permit

11 Miss. Admin. Code Pt. 2, Ch. 1.	Air Emission Regulations for the Prevention, Abatement, and Control of Air Contaminants
11 Miss. Admin. Code Pt. 2, Ch. 2.	Permit Regulations for the Construction and/or Operation of Air Emissions Equipment
11 Miss. Admin. Code Pt. 2, Ch. 3.	Regulations for the Prevention of Air Pollution Emergency Episodes
11 Miss. Admin. Code Pt. 2, Ch. 4.	Ambient Air Quality Standards
11 Miss. Admin. Code Pt. 2, Ch. 5.	Regulations for the Prevention of Significant Deterioration of Air Quality
11 Miss. Admin. Code Pt. 2, Ch. 6.	Air Emissions Operating Permit Regulations for the Purposes of Title V of the Federal Clean Air Act
11 Miss. Admin. Code Pt. 2, Ch. 7.	Acid Rain Program Permit Regulations for Purposes of Title IV of the Federal Clean Air Act
BACT	Best Available Control Technology
CEM	Continuous Emission Monitor
CEMS	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
CO	Carbon Monoxide
COM	Continuous Opacity Monitor
COMS	Continuous Opacity Monitoring System
DEQ	Mississippi Department of Environmental Quality
EPA	United States Environmental Protection Agency
gr/dscf	Grains Per Dry Standard Cubic Foot
HP	Horsepower
HAP	Hazardous Air Pollutant
lbs/hr	Pounds per Hour
M or K	Thousand
MACT	Maximum Achievable Control Technology
MM	Million
MMBTUH	Million British Thermal Units per Hour
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emissions Standards For Hazardous Air Pollutants (40 CFR Part 61) or National Emission Standards For Hazardous Air Pollutants for Source Categories (40 CFR Part 63)
NMVOC	Non-Methane Volatile Organic Compounds
NO_X	Nitrogen Oxides
NSPS	New Source Performance Standards (40 CFR Part 60)
O&M	Operation and Maintenance
PM	Particulate Matter
PM_{10}	Particulate Matter less than 10 μm in diameter
ppm	Parts per Million
PSD	Prevention of Significant Deterioration (40 CFR Part 52)
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
TPY	Tons per Year
TRS	Total Reduced Sulfur
VEE	Visible Emissions Evaluation
VHAP	Volatile Hazardous Air Pollutant
VOC	Volatile Organic Compound

APPENDIX B
Compliance Assurance Monitoring Plan

COMPLIANCE ASSURANCE MONITORING PLAN

This compliance assurance monitoring (CAM) plan was prepared in support of the Title V operating permit renewal for Mueller's casting operations in Fulton, Mississippi. The facility's Title V Permit, No. 1240-00012, was issued January 30, 2017 with an expiration date of December 31, 2021. The contents of this plan and information provided in the application forms are designed to present Mueller's proposed compliance assurance requirements for those sources subject to CAM.

CAM applies to individual emission units that satisfy all four (4) of the following criteria:

- The emission units are located at a major source that is required to obtain a Part 70 or 71 operating permit.
- Are subject to an emission limitation.
- Use a control device to achieve compliance with the limitation.
- Have pre-controlled potential emissions greater or equal to 100 percent of the amount in tons per year required for the source to be classified as a major source.

Control devices subject to CAM fall into two (2) categories dependent upon the post- controlled potential emissions. Sources with post-controlled potential emissions equal to or greater than the Title V thresholds are classified as "large" while sources and control devices with post-controlled emissions less than the Title V thresholds are classified as "other." Control devices subject to the "large" CAM provisions must install and operate continuous monitoring methods. Control devices subject to the "other" CAM provisions must monitor compliance with a minimum frequency of once per day.

The following emission units are exempt from CAM (40 CFR 64.2(b)):

1. Exempt emission limitations or standards. The requirements of this part shall not apply to any of the following emission limitations or standards:
   (i) Emission limitations or standards proposed by the Administrator after November 15, 1990 pursuant to section 111 or 112 of the Act.
   (ii) Stratospheric ozone protection requirements under title VI of the Act.
   (iii) Acid Rain program requirements pursuant to sections 404, 405, 406, 407(a), 407(b) or

410 of the Act.

(iv) Emission limitations or standards or other applicable requirements that apply solely under an emissions trading program approved or promulgated by the Administrator under the Act that allows for trading emissions within a source or between sources.

(v) An emissions cap that meets the requirements specified in 70.4(b)(12) or 71.6(a)(13)(iii) of this chapter.

(vi) Emission limitations or standards for which a part 70 or 71 permit specifies a continuous compliance determination method, as defined in 64.1. The exemption provided in this paragraph (b)(1)(vi) shall not apply if the applicable compliance method includes an assumed control device reduction factor that could be affected by the actual operation and maintenance of the control device (such as a surface coating line controlled by an incinerator for which continuous compliance is determined by calculating emissions on the basis of coating records and an assumed control device efficiency factor based on an initial performance test; in this example, this part would apply to the control device and capture system, but not to the remaining elements of the coating line, such as raw material usage).

A review of the emission units and their related control devices was conducted to determine applicability. A large category CAM plan was found to be required for the Maerz Melting Furnace Thermal Oxidizer. The Southwire Shaft Furnace RTO and the Maerz Melting Furnaces Baghouses are subject to the “other” CAM provisions. A CAM applicability summary is provided in the following table.

Table 1
CAM Applicability Determination Summary

ADD ON CONTROL DEVICE/ID	POLLUTANTS CONTROLLED	CONTRIBUTING SOURCE(S)	SOURCE EMISSION LIMITATION(S)	PRE-CONTROLLED EMISSIONS> MAJOR SOURCE?	POST-CONTROLLED EMISSIONS> MAJOR SOURCE?	CAM REQUIRED CLASSIFICATION
AA-002: Southwire Shaft Furnace RTO	PSD/BACT CO-90%	AA-001: Southwire Shaft Furnace	PM/PM_{10} SO_2 CO	Yes – CO	No	Yes – "Other" Category
AA-011: Maerz Melt Furnace Thermal Oxidizer	PSD/BACT CO-90%	AA-010: Maerz Melting Furnace	PM/PM_{10} CO SO_2	Yes – CO	Yes	Yes – "Large" Category
AA-012 & AA-013: Maerz Melt Furnace Baghouses (Parallel)	PSD/BACT PM/PM10 – 86%	AA-010: Maerz Melting Furnace	PM/PM_{10}	Yes – PM_{10}	No	Yes – "Other" Category
AA-015: North Refining Furnace Baghouse	PSD/BACT PM/PM_{10} – 86%	AA-014: North Refining Furnace	PM/PM_{10}	No	No	No CAM plan required
AA-017: South Refining Furnace Baghouse	PSD/BACT PM/PM_{10} – 86%	AA-016: South Refining Furnace	PM/PM_{10}	No	No	No CAM plan required

SOUTHWIRE SHAFT FURNACE RTO

Source Background Information

Emission Unit

AA-001: Southwire Shaft Furnace

Control Device

AA-002: BACT, Recuperative Thermal Oxidizer.

Pollutants

Carbon Monoxide

CAM Category

"Other" – Post-controlled emissions less than 100 tons per year.

Emission Control Technique

The facility will utilize a recuperative oxidizer to reduce carbon monoxide emissions by 90 percent from the Southwire Shaft Furnace. The RTO has maximum burner capacity of 20.0 MMBTU/hr and an exhaust flow rate of 21,600 scfm.

Applicable Emission Requirements – AA-001 & AA-002

- Opacity: Less than 40 percent (APC-S-1 3.1)
- CO: 12.91 lbs/hr and 56.55 tons/year (PSD/BACT)
- SO_2: Less than 500 ppm (APC-S-1, 4.2(a))
- PM/PM_{10}: 12.66 lbs/hr and 55.45 tons/year (PSD/BACT)

Monitoring Approach

Table 2 presents the monitoring approach for the Southwire Shaft Furnace recuperative thermal oxidizer.

Table 2

Monitoring Approach for Southwire Shaft Furnace RTO

	Performance Indicator
I. Indicator Measurement Approach	Chamber temperature
	The chamber temperature is monitored with a thermocouple.
II. Indicator Range	An excursion is defined as hourly average temperature readings less than 1400° F; excursions trigger an inspection, corrective action, and a reporting requirement.
III. Performance Criteria A. Data Representatives	The sensor is located in the incinerator chamber and measures the temperature with an accuracy of +5 degrees.
B. Verification of Operational Status	Not applicable
C. QA/QC Practices and Criteria	Accuracy of the thermocouple will be verified against a second calibrated thermocouple inserted into the incinerator chamber. The accuracy check will be conducted on an annual basis.
D. Monitoring Frequency	The data signal from the thermocouple is continuously transferred to a data logger.
Data Collection Procedure	The data is averaged and recorded by the data logger and can be displayed in a strip chart format.
Averaging Period	The hourly average is recorded and written to a computer file.

Justification

The Southwire Shaft Furnace; AA-001 is subject to the requirement to operate the oxidizer to ensure compliance with emission levels necessary to demonstrate continued compliance with the prevention of significant deterioration (PSD) permit limitation. The carbon monoxide emissions from the shaft furnace are directly related to the method of operation of the furnace. By burning a rich combustion mixture in the headspace above the melt, excess oxygen is scavenged, preventing the oxidation of the molten copper. The purpose of the oxidizer is to convert the CO to CO_2. The incinerator chamber temperature was selected because it is indicative of the oxidizer operation

(combustion occurring within the chamber). If the chamber temperature decreases significantly, complete combustion may not occur. It has been shown that the control efficiency achieved by an RTO is a function of its operating temperature or outlet temperature. By maintaining the operating temperature at or above a minimum, a level of control efficiency can be expected to be achieved.

Biennial stack testing of the Southwire Shaft Furnace and oxidizer are required by the current Title V operating permit, and the results of this testing demonstrate compliance with the required limits.

Maerz Melt Furnace Thermal Oxidizer

Source Background Information

Emissions Unit

AA-010: Maerz Melt Furnace

Control Device

AA-011: Industrial Technology Co. Thermal Oxidizer

Pollutants

Carbon Monoxide

CAM Category

"Large" – Post-controlled emissions greater than 100 tons per year

Emissions Control Technique

The facility utilizes a thermal oxidizer to reduce carbon monoxide emissions by 90 percent from the Maerz Melt Furnace. The oxidizer has maximum burner capacity of 6.6 MMBTU/hr and an exhaust flow rate of 31, 100 acfm.

Applicable Emission Requirements – AA-010 & AA-011

- Opacity: Less than 40 percent (APC-S-1 3.1)
- CO: 29.58 lbs/hr and 129.56 tons/year (PSD/BACT)
- SO_2: Less than 500 ppm (APC-S-1, 4.2(a))
- PM/PM_{10}: 7.65 lbs/hr and 33.51 tons/year (PSD/BACT)

Monitoring Approach

Table 3 presents the monitoring approach for the Maerz Melt Furnace thermal oxidizer.

Table 3

Monitoring Approach for Maerz Melt Furnace Thermal Oxidizer

	Performance Indicator
I. Indicator	Chamber temperature
Measurement Approach	The chamber temperature is monitored with a thermocouple.
II. Indicator Range	An excursion is defined as hourly average temperature readings less than 1400° F; excursions trigger an inspection, corrective action, and a reporting requirement.
III. Performance Criteria A. Data Representatives	The sensor is located in the incinerator chamber and measures the temperature with an accuracy of +5 degrees.
B. Verification of Operational Status	Not applicable
C. QA/QC Practices and Criteria	Accuracy of the thermocouple will be verified against a second calibrated thermocouple inserted into the incinerator chamber. The accuracy check will be conducted on an annual basis.
D. Monitoring Frequency	The data signal from the thermocouple is continuously transferred to a data logger.
Data Collection Procedure	The data is averaged and recorded by the data logger and can be displayed in a strip chart format.
Averaging Period	The hourly average is recorded and written to a computer file.

Justification

The Maerz Melt Furnace; AA-010 is subject to the requirement to operate the thermal oxidizer to ensure compliance with emission levels necessary to demonstrate continued compliance with the prevention of significant deterioration (PSD) permit limitation. The carbon monoxide emissions from the melt furnace are directly related to the method of operation of the furnace. By burning a rich combustion mixture in the headspace above the melt, excess oxygen is scavenged, preventing the oxidation of the molten copper. The purpose of the oxidizer is to convert the CO to CO_2. The oxidizer chamber temperature was selected because it is indicative of the oxidizer operation (combustion occurring within the chamber). If the chamber temperature decreases significantly, complete combustion may not occur. It has been shown that the control efficiency achieved by a

thermal oxidizer is a function of its operating temperature, or outlet temperature. By maintaining the operating temperature at or above a minimum, a level of control efficiency can be expected to be achieved. Biennial stack testing of the Maerz Melt Furnace and thermal oxidizer are required by the current Title V operating permit, and the results of this testing demonstrate compliance with the required limits.

Source Background Information

Emissions Unit

AA-010: Maerz Melt Furnace

Control Device

AA-012 & AA-013 – Two identical Amerex RP-12-848/944 D6 baghouse in parallel

Pollutants

PM/PM_{10}

CAM Category

"Other" – Post-controlled emissions less than 100 tons per year

Emissions Control Technique

The facility utilizes a two baghouses with woven nomex bags to reduce particulate emissions by 86 percent from the Maerz Melt Furnace. The baghouses have an exhaust flow rate of 55,440 acfm.

Applicable Emission Requirements – AA-010 (with AA-011) and AA-012 & AA-013

- Opacity: Less than 40 percent (APC-S-1 3.1)
- CO: 29.58 lbs/hr and 129.56 tons/year (PSD/BACT)
- SO_2: Less than 500 ppm (APC-S-1, 4.2(a))
- PM/PM_{10}: 7.65 lbs/hr and 33.51 tons/year (PSD/BACT)

Monitoring Approach

Table 4 presents the monitoring approach for the Maerz Melt Furnace baghouses.

Table 4

Monitoring Approach for Maerz Melt Furnace Baghouses

	Performance Indicator #1	Performance Indicator #2
Indicator Measurement Approach	Visible Emissions	Pressure Drop
	Visible emissions from the baghouse exhaust will be monitored using EPA Reference 22-like procedures (Visible/No-Visible)	Pressure drop across the baghouse is measured with a pressure transducer.
I. Indicator Range	An excursion is defined as the presence of visible emissions. If any opacity is noted, an EPA Method 9 VEE will be performed. Excursions trigger an inspection, corrective action, and a reporting requirement.	An excursion is defined as a pressure drop greater than 5 inches of water. Excursions trigger and inspection, corrective action, and a reporting requirement. APCD will be checked if pressure drop is less than 1 inch of water.
II. Performance Criteria A. Data Representativeness	Measurements are made at the emission point (baghouse exhaust)	Pressure taps are located at the baghouse inlets and outlets. The transducers have a minimum accuracy of 0.5 inches of water.
B. Verification of Operational Status	N/A	Not applicable
C. QA/QC Practices and Criteria	The observer (may be uncertified) will be familiar with Reference Method 22 and follow Method 22-like procedures. Follow-up Method 9 VEEs will be conducted by certified reader.	The pressure transducer is calibrated annually. Pressure taps are checked for plugging daily.
D. Monitoring Frequency	A 6-minute Method 22-like observation is performed daily. If visible emissions are noted, a Method 9 VEE will be performed.	Pressure drop is monitored continuously.
Data Collection Procedure	The observations will be documented by the observer.	The pressure drop is manually recorded daily.
Averaging Period	Method 22-like observation – N/A Method 9 – 6 minute average	None

Justification

The Maerz Melt Furnace; AA-010 is subject to the requirement to operate the baghouses to ensure compliance with emission levels necessary to demonstrate continued compliance with the prevention of significant deterioration (PSD) permit limitation. Particulate matter from the Maerz melt furnace are derived from combustion of the natural gas and any residues on the scrap copper, but are dominated by the volatization of metals from the molten copper. The condensed copper and trace amounts of other metals form submicron particles. Biennial stack testing of the Maerz Melt Furnace, thermal oxidizer and baghouses are required by the current Title V operating permit, and the results of this testing demonstrate compliance with the required limits.

References

Title V Operating Permit No. 1240-00028

USEPA CAM Web Site: http://www.epa.gov/ttn/emc/cam.html