State of Ohio Environmental Protection Agency

RE: FINAL PERMIT TO INSTALL **CERTIFIED MAIL**
STARK COUNTY

Street Address:
122 S. Front Street

Lazarus Gov. Center **TELE:** (614) 644-3020 **FAX:** (614) 644-2329

Mailing Address:
Lazarus Gov. Center
P.O. Box 1049

Application No: 15-01598
Fac ID: 1576001922
DATE: 1/24/2006

GNW Aluminum, Inc.
Gary Hoopes
PO Box 2418 1356 Harrisburg Street
Alliance, OH 44601

Enclosed please find an Ohio EPA Permit to Install which will allow you to install the described source(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, I urge you to read it carefully.

The Ohio EPA is urging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Pollution Prevention at (614) 644-3469.

You are hereby notified that this action by the Director is final and may be appealed to the Ohio Environmental Review Appeals Commission pursuant to Chapter 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed within thirty (30) days after the notice of the Directors action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency within three (3) days of filing with the Commission. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
309 South Fourth Street, Room 222
Columbus, Ohio 43215

Sincerely,

Michael W. Ahern

Michael W. Ahern, Manager
Permit Issuance and Data Management Section
Division of Air Pollution Control

CC: **USEPA** **Canton LAA**

STATE OF OHIO ENVIRONMENTAL PROTECTION AGENCY

Permit To Install	**Issue Date: 1/24/2006**
Terms and Conditions	**Effective Date: 1/24/2006**

FINAL PERMIT TO INSTALL 15-01598

Application Number:	15-01598
Facility ID:	1576001922
Permit Fee:	**$500**
Name of Facility:	GNW Aluminum, Inc.
Person to Contact:	Gary Hoopes
Address:	PO Box 2418 1356 Harrisburg Street Alliance, OH 44601

Location of proposed air contaminant source(s) [emissions unit(s)]:
1356 Harrisburg Street
Lexington Twp., **Ohio**

Description of proposed emissions unit(s):
Modification to existing PTI to change MACT Terms and conditions and equipment description.

The above named entity is hereby granted a Permit to Install for the above described emissions unit(s) pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described emissions unit(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans and specifications, the above described emissions unit(s) of pollutants will be granted the necessary permits to operate (air) or NPDES permits as applicable.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Joseph P. Koncelik

Director

Part I - GENERAL TERMS AND CONDITIONS

A. State and Federally Enforceable Permit-To-Install General Terms and Conditions

1. Monitoring and Related Recordkeeping and Reporting Requirements

a. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall maintain records that include the following, where applicable, for any required monitoring under this permit:

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

ii. The date(s) analyses were performed.

iii. The company or entity that performed the analyses.

iv. The analytical techniques or methods used.

v. The results of such analyses.

vi. The operating conditions existing at the time of sampling or measurement.

b. Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.

c. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall submit required reports in the following manner:

i. Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the appropriate Ohio EPA District Office or local air agency.

ii. Quarterly written reports of (i) any deviations from federally enforceable emission limitations, operational restrictions, and control device operating parameter limitations, excluding deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06, that have been detected by the testing, monitoring and recordkeeping requirements specified in this permit, (ii) the probable cause of such deviations, and (iii) any corrective actions or preventive measures taken, shall be made to

the appropriate Ohio EPA District Office or local air agency. The written reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. See B.9 below if no deviations occurred during the quarter.

iii. Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements contained in this permit shall be submitted (i.e., postmarked) to the appropriate Ohio EPA District Office or local air agency every six months, by January 31 and July 31 of each year for the previous six calendar months. If no deviations occurred during a six-month period, the permittee shall submit a semi-annual report, which states that no deviations occurred during that period.

iv. If this permit is for an emissions unit located at a Title V facility, then each written report shall be signed by a responsible official certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.

d. The permittee shall report actual emissions pursuant to OAC Chapter 3745-78 for the purpose of collecting Air Pollution Control Fees.

2. Scheduled Maintenance/Malfunction Reporting

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction, i.e., upset, of any emissions units or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of OAC rule 3745-15-06. (The definition of an upset condition shall be the same as that used in OAC rule 3745-15-06(B)(1) for a malfunction.) The verbal and written reports shall be submitted pursuant to OAC rule 3745-15-06.

Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emission unit(s) that is (are) served by such control system(s).

3. Risk Management Plans

If the permittee is required to develop and register a risk management plan pursuant to section 112(r) of the Clean Air Act, as amended, 42 U.S.C. 7401 et seq. ("Act"), the permittee shall comply with the requirement to register such a plan.

4. Title IV Provisions

If the permittee is subject to the requirements of 40 CFR Part 72 concerning acid rain, the permittee shall ensure that any affected emissions unit complies with those requirements. Emissions exceeding any allowances that are lawfully held under Title IV of the Act, or any regulations adopted thereunder, are prohibited.

5. Severability Clause

A determination that any term or condition of this permit is invalid shall not invalidate the force or effect of any other term or condition thereof, except to the extent that any other term or condition depends in whole or in part for its operation or implementation upon the term or condition declared invalid.

6. General Requirements

a. The permittee must comply with all terms and conditions of this permit. Any noncompliance with the federally enforceable terms and conditions of this permit constitutes a violation of the Act, and is grounds for enforcement action or for permit revocation, revocation and re-issuance, or modification

b. It shall not be a defense for the 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 federally enforceable terms and conditions of this permit.

c. This permit may be modified, revoked, or revoked and reissued, for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or revocation, or of a notification of planned changes or anticipated noncompliance does not stay any term and condition of this permit.

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

e. The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying or revoking this permit or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Director or an authorized representative of the Director, copies of records required to be kept by this permit. For information claimed to be confidential in the submittal to the Director, if the Administrator of the U.S. EPA requests such information, the permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

7. Fees

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78. The permittee shall pay all applicable permit-to-install fees within 30 days after the issuance of any permit-to-install. The permittee shall pay all applicable permit-to-operate fees within thirty days of the issuance of the invoice.

8. Federal and State Enforceability

Only those terms and conditions designated in this permit as federally enforceable, that are required under the Act, or any its applicable requirements, including relevant provisions designed to limit the potential to emit of a source, are enforceable by the Administrator of the U.S. EPA and the State and by citizens (to the extent allowed by section 304 of the Act) under the Act. All other terms and conditions of this permit shall not be federally enforceable and shall be enforceable under State law only.

9. Compliance Requirements

a. Any document (including reports) required to be submitted and required by a federally applicable requirement in this permit shall include a certification by a responsible official that, based on information and belief formed after reasonable inquiry, the statements in the document are true, accurate, and complete.

b. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Director of the Ohio EPA or an authorized representative of the Director to:

i. At reasonable times, enter upon the permittee's premises where a source is located or the emissions-related activity is conducted, or where records must be kept under the conditions of this permit.

ii. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, subject to the protection from disclosure to the public of confidential information consistent with ORC section 3704.08.

iii. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.

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

c. The permittee shall submit progress reports to the appropriate Ohio EPA District Office or local air agency concerning any schedule of compliance for meeting an applicable requirement. Progress reports shall be submitted semiannually, or more frequently if specified in the applicable requirement or by the Director of the Ohio EPA. Progress reports shall contain the following:

i. Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.

ii. An explanation of why any dates in any schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

10. Permit-To-Operate Application

a. If the permittee is required to apply for a Title V permit pursuant to OAC Chapter 3745-77, the permittee shall submit a complete Title V permit application or a complete Title V permit modification application within twelve (12) months after commencing operation of the emissions units covered by this permit. However, if the proposed new or modified source(s) would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification must be obtained before the operation of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule 3745-77-08(C)(3)(d).

b. If the permittee is required to apply for permit(s) pursuant to OAC Chapter 3745-35, the source(s) identified in this permit is (are) permitted to operate for a period of up to one year from the date the source(s) commenced operation. Permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within ninety (90) days after commencing operation of the source(s) covered by this permit.

11. Best Available Technology

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

12. Air Pollution Nuisance

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

13. Permit-To-Install

A permit-to-install must be obtained pursuant to OAC Chapter 3745-31 prior to "installation" of "any air contaminant source" as defined in OAC rule 3745-31-01, or "modification", as defined in OAC rule 3745-31-01, of any emissions unit included in this permit.

B. State Only Enforceable Permit-To-Install General Terms and Conditions

1. Compliance Requirements

The emissions unit(s) identified in this Permit shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.

2. Reporting Requirements

The permittee shall submit required reports in the following manner:

a. Reports of any required monitoring and/or recordkeeping of state-only enforceable information shall be submitted to the appropriate Ohio EPA District Office or local air agency.

b. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from state-only required emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the appropriate Ohio EPA District Office or local air agency. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

3. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder.

The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

4. Authorization To Install or Modify

If applicable, authorization to install or modify any new or existing emissions unit included in this permit shall terminate within eighteen months of the effective date of the permit if the owner or operator has not undertaken a continuing program of installation or modification or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation or modification. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

5. Construction of New Sources(s)

This permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. This permit does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the application and terms and conditions of this permit. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of this permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Issuance of this permit is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet the requirements of this permit or cannot meet applicable standards.

6. Public Disclosure

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC rule 3745-49-03.

7. Applicability

This Permit to Install is applicable only to the emissions unit(s) identified in the Permit To Install. Separate application must be made to the Director for the installation or modification of any other emissions unit(s).

8. Construction Compliance Certification

If applicable, the applicant shall provide Ohio EPA with a written certification (see enclosed form if applicable) that the facility has been constructed in accordance with the permit-to-install application and the terms and conditions of the permit-to-install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

9. Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations (See Section A of This Permit)

If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly (i.e., postmarked), by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

C. Permit-To-Install Summary of Allowable Emissions

The following information summarizes the total allowable emissions, by pollutant, based on the individual allowable emissions of each air contaminant source identified in this permit.

SUMMARY (for informational purposes only)
TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

Pollutant	Tons Per Year
D/F	1.06×10^{-8}
PE	5.12
SO_2	13.40
NO_X	4.69
CO	2.36
OC	0.32

Part II - FACILITY SPECIFIC TERMS AND CONDITIONS

A. State and Federally Enforceable Permit To Install Facility Specific Terms and Conditions

None

B. State Only Enforceable Permit To Install Facility Specific Terms and Conditions

None

Emissions Unit ID:**P001**

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	
P001 - 1.2 tons/hr Sweat Furnace No. #1 with three burners firing Fuel Oil #2 or Natural Gas for the Secondary processing of Aluminum utilizing a Natural Gas fired Afterburner with a 0.89 seconds residence time, a minimum operating temperature of 1600°F, and a capture efficiency of 99% for emission control	OAC rule 3745-31-05(A)(3) (supercedes PTI #15-01535)	OAC rule 3745-17-07(A)(1)
		OAC rule 3745-17-11(A)(2)
		40 CFR Part 63 Subpart RRR

Applicable Emissions Limitations/Control Measures	
Dioxins/Furans (D/F) emissions shall not exceed 2.41 x 10^{-9} pounds per hour and 1.06 x 10^{-8} tons per year. See A.I.2.b	Stack visible emissions (VE) shall not exceed 5% opacity as a three-minute average.
Particulate emissions (PE) shall not exceed 1.17 pounds per hour and 5.12 tons per year. See A.I.2.b	The emission limitation specified by this rule is less stringent than established pursuant to OAC rule 3745-31-05(A)(3).
Nitrogen oxide (NO_X) emissions shall not exceed 1.07 pounds per hour and 4.69 tons per year. See A.I.2.b	The emission limitation specified by this rule is less stringent than established pursuant to OAC rule 3745-31-05(A)(3).
Sulfur Dioxide (SO_2) emissions shall not exceed 3.06 pounds per hour and 13.4 tons per year. See A.I.2.b	Afterburner shall have a design residence time of 0.8 seconds or greater and an operating temperature of 1600 degrees F or greater.
Carbon monoxide (CO) emissions shall not exceed 0.54 pounds per hour and 2.36 tons per year. See A.I.2.b	Dioxin/Furan emissions shall not exceed 0.8 nanogram TEQ per dscm (3.5 x 10^{-10} gr per dscf) at 11 percent oxygen (O_2)
Organic compound (OC) emissions shall not exceed 0.074 pounds per hour and 0.32 tons per year. See A.I.2.b	See A.I.2.a & A.I.2.c.

2. Additional Terms and Conditions

2.a [40 CFR Part 63.1505 Subpart RRR]

1. The permittee shall comply with the emission standard of paragraph (f)(2) of 40 CFR Part 63.1505 Subpart RRR.

   (a) The permittee is not required to conduct a performance test to demonstrate compliance with the emission standard of paragraph (f)(2) of 40 CFR Part 63.1505 Subpart RRR, provided that, on and after the compliance date of this rule, the permittee operates and maintains an Afterburner with a design residence time of 0.8 seconds or greater and an operating temperature of 1600 deg. F or greater.

   (b) The permittee of a Sweat Furnace at a secondary aluminum production facility that is a major or area source must not discharge or cause to be discharged to the atmosphere emissions in excess of 0.80 nanograms (ng) of D/F TEQ per dscm (3.5×10^{-10} gr per dscf) at 11 percent oxygen (O_2).

2.b The hourly emission rates for all the pollutants referencing Section A.I.2.b of this permit were established for PTI purposes to reflect the potential to emit for emissions unit P001 (Sweat Furnace #1). Therefore, it is not necessary to develop record keeping and/or reporting requirements to ensure compliance with these limits.

2.c These terms and conditions supercede the terms and conditions of PTI #15-01535.

II. Operational Restrictions

1. [40 CFR Part 63.1506 Subpart RRR]

a. The permittee responsible for emissions unit P001 (Sweat Furnace #1 with an Afterburner for emissions control) shall:

   1. Maintain the 3-hour block average operating temperature of each Afterburner at or above 1600 deg. F.

2. Operate each Afterburner in accordance with the OM&M plan.

3. Provide and maintain easily visible labels posted at the Sweat Furnace, that identify the applicable emission limits and means of compliance, including:

   (a) The type of affected source or emission unit (e.g. sweat furnace).

   (b) The applicable operational standards and control methods (work practice or control device). This includes, but is not limited to, the type of charge to be used for a furnace (e.g. clean scrap only, aluminum scrap containing iron), flux materials and addition practices (e.g. no flux added), and the applicable operating parameter ranges and requirements as incorporated in the OM&M plan.

   (c) The Afterburner operating temperature and design residence time for the Sweat Furnace.

b. When a process parameter or add-on air pollution control device operating parameter deviates from the value stated in this permit and/or the range established during a performance test and incorporated in the OM&M plan, the permittee must initiate corrective action. Corrective action must restore operation of the affected source or emission unit (including the process or control device) to its normal or usual mode of operation as expeditiously as practical in accordance with good air pollution control practices for minimizing emissions. Corrective actions taken must include follow-up actions necessary to return the process or control device parameter level(s) to the value or range of values established during the performance test and steps to prevent the likely recurrence of the cause of a deviation.

2. The permittee shall burn only Fuel Oil #2 with a sulfur content not above 0.5 percent in the Sweat Furnace at a maximum capacity of 39 gallons per hour and 342,000 gallons per year or Natural Gas with a heat capacity of 1059 BTU/scft at a rate of 5082 scft per hour and 44,520,000 scft per year.

3. The permittee shall burn only Natural Gas with a heat capacity of 1059 BTU/scft in the Afterburner at a rate of 1315 scft per hour and 11,520,000 scft per year.

4. Dross shall not be charged in the Sweat Furnace.

5. Chlorine shall not be added for demagging the Sweat Furnace.

6. Flux shall not be added to the aluminum scrap processed in the Sweat Furnace.

III. Monitoring and/or Recordkeeping Requirements

1. [40 CFR Part 63.1510 Subpart RRR]

a. Operation, maintenance, and monitoring (OM&M) plan. The permittee must prepare and implement for each new or existing affected source and emission unit, a written operation, maintenance, and monitoring (OM&M) plan. The permittee must submit the plan to the applicable permitting authority for review and approval as part of the application for a part 70 (40 CFR Part 70) or part 71 (40 CFR Part 71) permit. Any subsequent changes to the plan must be submitted to the applicable permitting authority for review and approval. Pending approval by the applicable permitting authority of an initial or amended plan, the owner or operator must comply with the provisions of the submitted plan. Each plan must contain the following information:

1. Process and control device parameters to be monitored to determine compliance, along with established operating levels or ranges, as applicable, for each process and control device.

2. A monitoring schedule for each affected source and emission unit.

3. Procedures for the proper operation and maintenance of each process unit and add-on control device used to meet the applicable emission limits or standards in 40 CFR Part 63.1505 Subpart RRR.

4. Procedures for the proper operation and maintenance of monitoring devices or systems used to determine compliance, including:

   (a) Calibration and certification of accuracy of each monitoring device, at least once every 6 months, according to the manufacturer's instructions; and

   (b) Procedures for the quality control and quality assurance of continuous emission or opacity monitoring systems as required by the general provisions in 40 CFR Part 63.1510 Subpart A.

5. Procedures for monitoring process and control device parameters, including procedures for annual inspections of Afterburners, and if applicable, the procedure to be used for determining charge/feed (or

throughput) weight if a measurement device is not used.

6. Corrective actions to be taken when process or operating parameters or add-on control device parameters deviate from the value or range established in paragraph (b)(1) of 40 CFR Part 63.1510 Subpart RRR including:

   (a) Procedures to determine and record the cause of a deviation or an excursion, and the time the deviation or excursion began and ended; and

   (b) Procedures for recording the corrective action taken, the time corrective action was initiated, and the time/date corrective action was completed.

7. A maintenance schedule for each process and control device that is consistent with the manufacturer's instructions and recommendations for routine and long-term maintenance.

b. These requirements apply to the permittee of an affected source using an Afterburner to comply with the requirements of 40 CFR Part 63.1510 Subpart RRR.

1. The permittee must install, calibrate, maintain, and operate a device to continuously monitor and record the operating temperature of the Afterburner consistent with the requirements for continuous monitoring systems in 40 CFR Part 63.1510 Subpart A.

2. The temperature monitoring device must meet each of these performance and equipment specifications:

   (a) The temperature monitoring device must be installed at the exit of the combustion zone of each Afterburner.

   (b) The monitoring system must record the temperature in 15-minute block averages and determine and record the average temperature for each 3-hour block period.

   (c) The recorder response range must include zero and 1.5 times the average temperature established according to the requirements in

paragraph (m) of 40 CFR Part 63.1512 Subpart RRR.

(d) The reference method must be a National Institute of Standards and Technology calibrated reference thermocouple-potentiometer system or alternate reference, subject to approval by the Administrator.

3. The permittee must conduct an inspection of each Afterburner at least once a year and record the results. At a minimum, an inspection must include:

(a) Inspection of all burners, pilot assemblies, and pilot sensing devices for proper operation and clean pilot sensor;

(b) Inspection for proper adjustment of combustion air;

(c) Inspection of internal structures (e.g., baffles) to ensure structural integrity;

(d) Inspection of dampers, fans, and blowers for proper operation;

(e) Inspection for proper sealing;

(f) Inspection of motors for proper operation;

(g) Inspection of combustion chamber refractory lining and clean and replace lining as necessary;

(h) Inspection of Afterburner shell for corrosion and/or hot spots;

(i) Documentation, for the burn cycle that follows the inspection, that the Afterburner is operating properly and any necessary adjustments have been made; and

(j) Verification that the equipment is maintained in good operating condition.

(k) Following an equipment inspection, all necessary repairs must be completed in accordance with the requirements of the OM&M plan.

c. An permittee may submit an application to the Administrator for approval of alternate monitoring requirements to demonstrate compliance with the emission standards of this subpart, subject to the provisions of paragraphs (w)(1) through (6) of 40 CFR Part 63.1510 Subpart RRR.

1. The Administrator will not approve averaging periods other than those specified in 40 CFR Part 63.1510 Subpart RRR.

2. The permittee must continue to use the original monitoring requirement until necessary data are submitted and approval is received to use another monitoring procedure.

3. The permittee shall submit the application for approval of alternate monitoring methods no later than the notification of the performance test. The application must contain the information specified in paragraphs (w)(3) (i) through (iii) of 40 CFR Part 63.1510 Subpart RRR:

   (a) Data or information justifying the request, such as the technical or economic infeasibility, or the impracticality of using the required approach;

   (b) A description of the proposed alternative monitoring requirements, including the operating parameters to be monitored, the monitoring approach and technique, and how the limit is to be calculated; and

   (c) Data and information documenting that the alternative monitoring requirement(s) would provide equivalent or better assurance of compliance with the relevant emission standard(s).

4. The Administrator will not approve an alternate monitoring application unless it would provide equivalent or better assurance of compliance with the relevant emission standard(s). Before disapproving any alternate monitoring application, the Administrator will provide:

   (a) Notice of the information and findings upon which the intended disapproval is based; and

   (b) Notice of opportunity for the permittee to present additional supporting information before final action is taken on the application. This notice will specify how much additional time is allowed for the permittee to provide additional supporting information.

5. The permittee is responsible for submitting any supporting information in

a timely manner to enable the Administrator to consider the application prior to the performance test. Neither submittal of an application nor the Administrator's failure to approve or disapprove the application relieves the permittee of the responsibility to comply with any provisions of 40 CFR Part 63.1510 Subpart RRR and this permit.

6. The Administrator may decide at any time, on a case-by-case basis, that additional or alternative operating limits, or alternative approaches to establishing operating limits, are necessary to demonstrate compliance with the emission standards of 40 CFR Part 63.1510 Subpart RRR and this permit.

2. [40 CFR Part 63.1517 Subpart RRR]

a. As required by paragraph (b) of 40 CFR Part 63.10, the permittee shall maintain files of all information (including all reports and notifications) required by the general provisions and 40 CFR Part 63.1517 Subpart RRR.

1. The permittee must retain each record for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. The most recent 2 years of records must be retained at the facility. The remaining 3 years of records may be retained off site.

2. The permittee may retain records on microfilm, computer disks, magnetic tape, or microfiche; and

3. The permittee may report required information on paper or on a labeled computer disk using commonly available and EPA-compatible computer software.

b. In addition to the general records required by paragraph (b) of 40 CFR Part 63.10, the permittee of a new or existing affected source (including an emission unit in a secondary aluminum processing unit) must maintain records of:

1. For each affected source with emissions controlled by an Afterburner:

(a) Records of 15-minute block average Afterburner operating temperature, including any period when the average temperature in any 3-hour block period falls below the compliant operating parameter value with a brief explanation of the cause of the excursion and the corrective action taken; and

(b) Records of annual Afterburner inspections.

2. Records of monthly inspections for proper unit labeling for each affected source and emission unit.

3. Records for any approved alternative monitoring or test procedure.

4. Current copy of all required plans, including any revisions, with records documenting conformance with the applicable plan, including:

   (a) Startup, shutdown, and malfunction plan;

   (b) OM&M plan; and

   (c) Site-specific Sweat Furnace emission plan (if applicable).

5. For each Sweat Furnace, records of the type of fuel oil used, the percent by weight of sulfur in the fuel oil used, quantity in gallons of fuel oil used per hour, total gallons of fuel oil used per year, and the type of charge (e.g. type of material with any additions that is placed in the furnace).

3. The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

   a. the color of the emissions;

   b. whether the emissions are representative of normal operations;

   c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;

   d. the total duration of any visible emission incident; and

   e. any corrective actions taken to eliminate the visible emissions.

IV. Reporting Requirements

1. [40 CFR Part 63.1515 Subpart RRR]

a. Initial notifications. The permittee must submit initial notifications to the applicable permitting authority as described in paragraphs (a)(1) through (7) of 40 CFR Part 63.1515 Subpart RRR.

1. As required by paragraph (b)(1) of 40 CFR Part 63.9, the permittee must provide notification for an area source that subsequently increases its emissions such that the source is a major source subject to the standard.

2. As required by paragraph (b)(3) of 40 CFR Part 63.9, the permittee of a new or reconstructed affected source, or a source that has been reconstructed such that it is an affected source, that has an initial startup after the effective date of this subpart and for which an application for approval of construction or reconstruction is not required under paragraph (d) of 40 CFR Part 63.5, must provide notification that the source is subject to the standard.

3. As required by paragraph (b)(4) 40 CFR Part 63.9, the permittee of a new or reconstructed major affected source that has an initial startup after the effective date of this subpart and for which an application for approval of construction or reconstruction is required by paragraph (d) of 40 CFR Part 63.5 must provide the following notifications:

   (a) Intention to construct a new major affected source, reconstruct a major source, or reconstruct a major source such that the source becomes a major affected source;

   (b) Date when construction or reconstruction was commenced (submitted simultaneously with the application for approval of construction or reconstruction, if construction or reconstruction was commenced before the effective date of this subpart, or no later than 30 days after the date construction or reconstruction commenced, if construction or reconstruction commenced after the effective date of 40 CFR Part 63.1515 Subpart RRR);

   (c) Anticipated date of startup; and

   (d) Actual date of startup.

4. As required by paragraph (b)(5) of 40 CFR Part 63.9, after the effective date of 40 CFR Part 63.1515 Subpart RRR, a permittee who intends to construct a new affected source or reconstruct an affected source subject to 40 CFR Part 63.1515 Subpart RRR, or reconstruct a source such that it becomes an affected source subject to 40 CFR Part 63.1515 Subpart RRR, must provide notification of the intended construction or

reconstruction. The notification must include all the information required for an application for approval of construction or reconstruction as required by paragraph (d) of 40 CFR Part 63.5. For major sources, the application for approval of construction or reconstruction may be used to fulfill these requirements.

(a) The application must be submitted as soon as practical before the construction or reconstruction is planned to commence (but no sooner than the effective date) if the construction or reconstruction commences after the effective date of 40 CFR Part 63.1515 Subpart RRR; or

(b) The application must be submitted as soon as practicable before startup but no later than 90 days after the effective date of this subpart if the construction or reconstruction had commenced and initial startup had not occurred before the effective date.

5. As required by paragraph (d) of 40 CFR Part 63.9, the permittee must provide notification of any special compliance obligations for a new source.

6. As required by paragraphs (e) and (f) of 40 CFR Part 63.9, the permittee must provide notification of the anticipated date for conducting performance tests and visible emission observations. The permittee must notify the Administrator of the intent to conduct a performance test at least 60 days before the performance test is scheduled; notification of opacity or visible emission observations for a performance test must be provided at least 30 days before the observations are scheduled to take place.

7. As required by paragraph (g) of 40 CFR Part 63.9, the permittee must provide additional notifications for sources with continuous emission monitoring systems or continuous opacity monitoring systems.

b. Notification of compliance status report. Each permittee must submit a notification of compliance status report within 60 days after the compliance dates specified in 40 CFR Part 63.1501. The notification must be signed by the responsible official who must certify its accuracy. A complete notification of compliance status report must include the information specified in paragraphs (b)(1) through (3) of 40 CFR Part 63.1515 Subpart RRR. The required information may be submitted in an operating permit application, in an

amendment to an operating permit application, in a separate submittal, or in any combination. If a permittee submits the information specified in 40 CFR Part 63.1515 Subpart RRR at different times or in different submittals, later submittals may refer to earlier submittals instead of duplicating and resubmitting the information previously submitted. A complete notification of compliance status report must include:

1. Manufacturer's specification or analysis documenting the design residence time of no less than 0.8 seconds and design operating temperature of no less than 1600 deg. F for each Afterburner used to control emissions from a Sweat Furnace that is not subject to a performance test.

2. Approved OM&M plan (including site-specific monitoring plan for each Sweat Furnace with Afterburner).

3. Startup, shutdown, and malfunction plan, with revisions.

2. [40 CFR Part 63.1516 Subpart RRR]

a. Startup, shutdown, and malfunction plan/reports. The permittee must develop and implement a written plan as described in paragraph (e)(3) of 40 CFR Part 63.6 that contains specific procedures to be followed for operating and maintaining the source during periods of startup, shutdown, and malfunction, and a program of corrective action for malfunctioning process and air pollution control equipment used to comply with the standard. The permittee shall also keep records of each event as required by paragraph (b) of 40 CFR Part 63.10 and record and report if an action taken during a startup, shutdown, or malfunction is not consistent with the procedures in the plan as described in paragraph (e)(3) of 40 CFR Part 63.6. In addition to the information required in paragraph (e)(3) of 40 CFR Part 63.6, the plan must include:

1. Procedures to determine and record the cause of the malfunction and the time the malfunction began and ended; and

2. Corrective actions to be taken in the event of a malfunction of a process or control device, including procedures for recording the actions taken to correct the malfunction or minimize emissions.

b. Excess emissions/summary report. As required by paragraph (e)(3) of 40 CFR Part 63.10, the permittee must submit semiannual reports within 60 days after the end of each 6-month period. Each report must contain the information specified in paragraph (c) of 40 CFR Part 63.10. When no deviations of parameters have occurred, the permittee must submit a report stating that no excess emissions occurred during the reporting period.

1. A report must be submitted if any of these conditions occur during a 6-month reporting period:

(a) An excursion of a compliant process or operating parameter value or range (e.g. afterburner operating temperature, definition of acceptable scrap, or other approved operating parameter).

(b) An action taken during a startup, shutdown, or malfunction was not consistent with the procedures in the plan as described in paragraph (e)(3) of 40 CFR Part 63.6.

(c) An affected source (including an emission unit in a secondary

aluminum processing unit) was not operated according to the requirements of 40 CFR Part 63.1516 Subpart RRR.

c. Annual compliance certifications. The annual certification shall be submitted on or before April 30th of each calendar year during the permit term to the Ohio EPA director or the Canton Local Air Agency. For the purpose of annual certifications of compliance required by 40 CFR Part 70 or 71, the permittee must certify continuing compliance based upon, but not limited to, the following conditions:

1. Any period of excess emissions, as defined in paragraph (b) (1) of 40 CFR Part 63.1516 Subpart RRR, that occurred during the year were reported as required by this subpart; and

2. All monitoring, record keeping, and reporting requirements were met during the year.

3. The permittee shall submit semiannual written reports which (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Ohio EPA Director or Canton Local Air Agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Emission Limitations:
0.80 nanogram (ng) of D/F TEQ per dscm (3.5 x 10^{-10} gr per dscf) at 11 percent oxygen (O_2)

<u>Applicable Compliance Method:</u>
Compliance shall be demonstrated by the Monitoring and Recordkeeping requirements contained in Section A.III of this permit and operating restrictions as shown in the calculations in Section A.V.2 of this permit). A performance test is not required provided that the permittee operates and maintains an afterburner with a design residence time of 0.8 seconds (see actual design calculations in Section A.V.2 of this permit for actual afterburner residence time) or greater and an operating temperature of 1600 deg. F or greater.

2. Emission Limitations:

2.41 x 10^{-9} pounds of D/F per hour and 1.06 x 10^{-8} tons of D/F per year

Applicable Compliance Method:
Based on the emissions limitations for Dioxins and Furans (D/F) of 0.80 nanogram (ng) of D/F TEQ per dscm (3.5 x 10^{-10} gr per dscf) at 11 percent oxygen (O_2) per the MACT standard in 40 CFR Part 63 Subpart RRR for a Sweat Furnace, the Sweat Furnace firing Fuel Oil #2 at a maximum of 39 gallons per hour as stated in Section A.II.2 of this permit, and the Afterburner firing Natural Gas as stated in Section A.II.3 of this permit, the actual emissions in pounds of D/F per hour and tons of D/F per year were calculated as shown below.

Furnace Combustion Products (based on maximum fuel usage of 39 gallons per hour)

(39 gallons of fuel oil #2 per hour) x (7.05 pounds of fuel oil #2 per gallon) x (200 cubic feet of combustion products per pound of fuel oil #2) x (1 hour / 60 minutes) = 916.5 scfm

Flow to Afterburner (based on 10% excess air & 400 cfm approx. air infiltration through doors)

(916.5 scfm) + (0.1 x 916.5 scfm) + (400 scfm) = 1408 scfm

Energy Required for Afterburner (Heat Capacity 1200°F to 1600°F with 10% Heat Loss)

((1408 scfm) x (60 minutes per hour) x (1 lbmole / 379 cubic feet) x (11,710 BTU per lbmole - 8524 BTU per lbmole)) / (1 - 0.1) = 789,000 BTU/hr

Fuel Required for Natural Gas Afterburner (Available Heat @ 1600°F & 600 BTU/cu. ft)

(789,000 BTU/hr) x (1 cu. ft / 600 BTU) = 1315 cu. ft / hr

Afterburner Flow (11 cu. ft Comb. Prod. per cu. ft Natural Gas & 10% excess air)

(1315 cu. ft / hr) x (11 cu. ft of combustion products per cu. ft of Natural Gas) x (1 hour / 60 minutes) x (1 + 0.1) = 265 scfm

Total Flow through the Sweat Furnace and Afterburner

(1408 scfm) + (265 scfm) = 1673 scfm

(1673 scfm) x ((1600° + 460 = 2060°R) / (70° + 460 = 530°R)) x (1 minute / 60 seconds) = 108 cu. ft / sec

Residence Time through Afterburner

((Afterburner Volume 58 inches x 68 inches x 42 inches x (1 ft / 12 inches) = 96 cu. ft) / (108 cu. ft /sec) = 0.89 seconds

Dioxins & Furans (D/F) Allowable Emission Calculations

$Cw = C_d (1-B_{ws})$ Using 3% Moisture for B_{ws} EQ. 20-1, 40 CFR Part 60 Appendix A

$C_d = C_{adj}$ ((20.9 - 16) / (20.9 - 11)) Using an estimated 16% O_2 for the Afterburner & 11% O_2 per the MACT emission standard 40 CFR Part 63 Subpart RRR EQ. 20-4, 40 CFR Part 60 Appendix A

Cw = (0.8ng / m^3) x ((20.9 - 16) / (20.9 - 11)) x (1 - 0.3) x (1m^3 / 35.3145 cu. ft) x (1 lb / 453.593 x 10^9 ng) = <u>2.40 x 10^{-14} lb/cu. ft</u>

D/F Emissions = (2.40 x 10^{-14} lb/cu. ft) x (1673 scfm) x (60 minutes / 1 hour) = <u>2.41 x 10^{-9} pounds of D/F per hour</u>

Annual D/F Emissions = (2.41 x 10^{-9} lb/hr) x (8760 hours / 2000 lbs) = <u>1.06 x 10^{-8} tons of D/F per year</u>

3. Emission Limitations:

1.17 pounds of PE per hour and 5.12 tons of PE per year

<u>Applicable Compliance Method:</u>
Based on the following calculations for the Ambient Air Flow and the Actual Stack Gas Flow, the actual PE emissions in pounds of PE per hour and tons of PE per year were calculated as shown below. If required, compliance with this emission limitation shall be demonstrated by emission tests performed in accordance with the procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 5.

<u>Ambient Air Flow</u> needed to reduce Stack Gas Temp. to 400°F assuming 60°F Ambient Temp. with an anticipated Heat Loss of 20% to the building & the Total Flow through the Sweat Furnace and Afterburner of 1673 scfm.

<u>Ambient Air Flow</u> = (1673 scfm x (11710 BTU/lbmole "Gas at 1600°F" - 2576 BTU/lbmole "Gas at 400°F") x (1 - 0.2)) / (2576 BTU/lbmole "Gas at 400°F" - 194.6 BTU/lbmole "Gas at 60°F") = <u>5134 scfm</u>

<u>Actual Stack Gas Flow</u>
(1673 scfm) + (5134 scfm) = <u>6807 scfm</u>

<u>Particulate Emissions (PE)</u> = ((6807 scfm) x (0.02 grains/scf) x (60 minutes/hr)) / (7000 grains/lb) = <u>1.17 pounds of PE per hour</u>

Annual Particulate Emissions (PE) = (1.17 lb/hr) x (8760 hours / 2000 lbs) = 5.12 tons of PE per year

4. Emission Limitations:

3.06 pounds of SO_2 per hour and 13.40 tons of SO_2 per year

Applicable Compliance Method:
Based on the emission factor in AP-42 for SO_2, the Sweat Furnace firing Fuel Oil #2 or Natural Gas as stated in Section A.II.2 of this permit (using the worst case scenario), and the Afterburner firing Natural Gas as stated in Section A.II.3 of this permit, the actual SO_2 emissions in pounds of SO_2 per hour and tons of SO_2 per year were calculated as shown below. If required, compliance with this emission limitation shall be demonstrated by emission tests performed in accordance with the procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and 6.

Fuel Oil #2 fired in Sweat Furnace Burners:
Using the emission factor from AP-42 for SO_2 of 157(S), S = % of Sulfur in Fuel Oil #2 = 0.5, (157) x (0.5) = 78.5 pounds per 1000 gallons

SO_2 emissions = (39 gallons of Fuel Oil #2 per hour) x (78.5 pounds / 1000 gallons) = 3.06 pounds of SO_2 per hour

Annual SO_2 emissions = (3.06 pounds of SO_2 per hour) x (8760 hours / 2000 pounds) = 13.40 tons of SO_2 per year

Natural Gas fired in Sweat Furnace Burners:
Using the emission factor from AP-42 for SO_2 = 0.6 pounds per 10^6 scft & the Natural Gas Usage

Natural Gas Usage = ((39 gallons of Fuel Oil #2 per hour) x (138,000 BTU per gallon of Fuel Oil #2)) / (1059 BTU per scft of Natural Gas) = 5082 scft per hour

SO_2 emissions = (5082 scft per hour) x (0.6 pounds per 10^6 scft) = 0.003 pounds of SO_2 per hour

Annual SO_2 emissions = (0.003 pounds of SO_2 per hour) x (8760 hours / 2000 pounds) = 0.01 tons of SO_2 per year

Natural Gas fired Afterburner:
Using the emission factor from AP-42 for SO_2 = 0.6 pounds per 10^6 scft & the Afterburner Fuel Required = 1315 scft per hour

SO_2 emissions = (1315 scft per hour) x (0.6 pounds per 10^6 scft) = 0.00079 pounds of

SO_2 per hour

Annual SO_2 emissions = (0.00079 pounds of SO_2 emissions per hour) x (8760 hours / 2000 pounds) = 0.003 tons of SO_2 per year

Worst Case Scenario firing Fuel Oil #2 in the Sweat Furnace with the Natural Gas Afterburner:

SO_2 emissions = (3.06 pounds of SO_2 per hour) + (0.00079 pounds of SO_2 per hour) = 3.06 pounds of SO_2 per hour

Annual SO_2 emissions = (13.40 tons of SO_2 per year) + (0.003 tons of SO_2 per year) = 13.40 tons of SO_2 per year

5. Emission Limitations:

1.07 pounds of NO_X per hour and 4.69 tons of NO_X per year

Applicable Compliance Method:
Based on the emission factor in AP-42 for NO_X, the Sweat Furnace firing Fuel Oil #2 or Natural Gas as stated in Section A.II.2 of this permit (using the worst case scenario), and the Afterburner firing Natural Gas as stated in Section A.II.3 of this permit, the actual NO_X emissions in pounds of NO_X per hour and tons of NO_X per year were calculated as shown below. If required, compliance with this emission limitation shall be demonstrated by emission tests performed in accordance with the procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and 7.

Fuel Oil #2 fired in Sweat Furnace Burners:
Using the emission factor from AP-42 for NO_X = 24 pounds per 1000 gallons

NO_X emissions = (39 gallons of Fuel Oil #2 per hour) x (24 pounds / 1000 gallons) = 0.94 pounds of NO_X per hour

Annual NO_X emissions = (0.94 pounds of NO_X per hour) x (8760 hours / 2000 pounds) = 4.12 tons of NO_X per year

Natural Gas fired in Sweat Furnace Burners:
Using the emission factor from AP-42 for NO_X = 100 pounds per 10^6 scft & the Natural Gas Usage

Natural Gas Usage = ((39 gallons of Fuel Oil #2 per hour) x (138,000 BTU per gallon of Fuel Oil #2)) / (1059 BTU per scft of Natural Gas) = 5082 scft per hour

NO_X emissions = (5082 scft per hour) x (100 pounds per 10^6 scft) = 0.51 pounds of NO_X per hour

Annual NO_X emissions = (0.51 pounds of NO_X per hour) x (8760 hours / 2000 pounds) = 2.23 tons of NO_X per year

Natural Gas fired Afterburner:
Using the emission factor from AP-42 for NO_X = 100 pounds per 10^6 scft & the Afterburner Fuel Required = 1315 scft per hour

NO_X emissions = (1315 scft per hour) x (100 pounds per 10^6 scft) = 0.13 pounds of NO_X per hour

Annual NO_X emissions = (0.13 pounds of NO_X emissions per hour) x (8760 hours / 2000 pounds) = 0.57 tons of NO_X per year

Worst Case Scenario firing Fuel Oil #2 in the Sweat Furnace with the Natural Gas Afterburner:

NO_X emissions = (0.94 pounds of NO_X per hour) + (0.13 pounds of NO_X per hour) = 1.07 pounds of NO_X per hour

Annual NO_X emissions = (4.12 tons of NO_X per year) + (0.57 tons of NO_X per year) = 4.69 tons of NO_X per year

6. Emission Limitations:

0.54 pounds of CO per hour and 2.36 tons of CO per year

Applicable Compliance Method:
Based on the emission factor in AP-42 for CO, the Sweat Furnace firing Fuel Oil #2 or Natural Gas as stated in Section A.II.2 of this permit (using the worst case scenario), and the Afterburner firing Natural Gas as stated in Section A.II.3 of this permit, the actual CO emissions in pounds of CO per hour and tons of CO per year were calculated as shown below. If required, compliance with this emission limitation shall be demonstrated by emission tests performed in accordance with the procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and 10.

Fuel Oil #2 fired in Sweat Furnace Burners:
Using the emission factor from AP-42 for CO = 5 pounds per 1000 gallons

CO emissions = (39 gallons of Fuel Oil #2 per hour) x (5 pounds / 1000 gallons) = 0.20 pounds of CO per hour

Annual CO emissions = (0.20 pounds of CO per hour) x (8760 hours / 2000 pounds) = 0.89 tons of CO per year

Natural Gas fired in Sweat Furnace Burners:
Using the emission factor from AP-42 for CO = 84 pounds per 10^6 scft & the Natural Gas Usage

Natural Gas Usage = ((39 gallons of Fuel Oil #2 per hour) x (138,000 BTU per gallon of Fuel Oil #2)) / (1059 BTU per scft of Natural Gas) = 5082 scft per hour

CO emissions = (5082 scft per hour) x (84 pounds per 10^6 scft) = 0.43 pounds of CO per hour

Annual CO emissions = (0.43 pounds of CO per hour) x (8760 hours / 2000 pounds) = 1.88 tons of CO per year

Natural Gas fired Afterburner:
Using the emission factor from AP-42 for CO = 84 pounds per 10^6 scft & the Afterburner Fuel Required = 1315 scft per hour

CO emissions = (1315 scft per hour) x (84 pounds per 10^6 scft) = 0.11 pounds of CO per hour

Annual CO emissions = (0.11 pounds of CO emissions per hour) x (8760 hours / 2000 pounds) = 0.48 tons of CO per year

Worst Case Scenario firing Natural Gas in the Sweat Furnace with the Natural Gas Afterburner:

CO emissions = (0.43 pounds of CO per hour) + (0.11 pounds of CO per hour) = 0.54 pounds of CO per hour

Annual CO emissions = (1.88 tons of CO per year) + (0.48 tons of CO per year) = 2.36 tons of CO per year

7. Emission Limitations:

0.074 pounds of OC per hour and 0.32 tons of OC per year

Applicable Compliance Method:
Based on the emission factor in AP-42 for OC, the Sweat Furnace firing Fuel Oil #2 or Natural Gas as stated in Section A.II.2 of this permit (using the worst case scenario), and the Afterburner firing Natural Gas as stated in Section A.II.3 of this permit, the actual OC emissions in pounds of OC per hour and tons of OC per year were calculated as shown below. If required, compliance with this emission limitation shall be demonstrated by emission tests performed in accordance with the procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and 18.

Fuel Oil #2 fired in Sweat Furnace Burners:
Using the emission factor from AP-42 for OC = 1.04 pounds per 1000 gallons

OC emissions = (39 gallons of Fuel Oil #2 per hour) x (1.04 pounds / 1000 gallons) = 0.04 pounds of OC per hour

Annual OC emissions = (0.04 pounds of OC per hour) x (8760 hours / 2000 pounds) = 0.18 tons of OC per year

Natural Gas fired in Sweat Furnace Burners:
Using the emission factor from AP-42 for OC = 11 pounds per 10^6 scft & the Natural Gas Usage

Natural Gas Usage = ((39 gallons of Fuel Oil #2 per hour) x (138,000 BTU per gallon of Fuel Oil #2)) / (1059 BTU per scft of Natural Gas) = 5082 scft per hour

OC emissions = (5082 scft per hour) x (11 pounds per 10^6 scft) = 0.06 pounds of OC per hour

Annual OC emissions = (0.06 pounds of OC per hour) x (8760 hours / 2000 pounds) = 0.26 tons of OC per year

Natural Gas fired Afterburner:
Using the emission factor from AP-42 for OC = 11 pounds per 10^6 scft & the Afterburner Fuel Required = 1315 scft per hour

OC emissions = (1315 scft per hour) x (11 pounds per 10^6 scft) = 0.014 pounds of OC per hour

Annual OC emissions = (0.014 pounds of OC emissions per hour) x (8760 hours / 2000 pounds) = 0.06 tons of OC per year

Worst Case Scenario firing Natural Gas in the Sweat Furnace with the Natural Gas Afterburner:

OC emissions = (0.06 pounds of OC per hour) + (0.014 pounds of OC per hour) = 0.074 pounds of OC per hour

Annual OC emissions = (0.26 tons of OC per year) + (0.06 tons of OC per year) = 0.32 tons of OC per year

8. Emission Limitation:

Stack visible particulate emissions from the Sweat Furnace shall not exceed 5% opacity as a three-minute average.

Applicable Compliance Method:
If required, compliance shall be demonstrated by visible emissions monitoring performed in accordance with 40 CFR Part 60 Appendix A, Method 9 using the methods and procedures specified in OAC rule 3745-17-03(B)(3)(a) and OAC rule 3745-17-03(B)(3)(b).

VI. Miscellaneous Requirements

None

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
P001 - 1.2 ton/hr Sweat Furnace No. #1 for the Secondary processing of Aluminum utilizing an Afterburner	OAC rule 3745-31-05	NONE

2. Additional Terms and Conditions

2.a NONE

II. Operational Restrictions

NONE

III. Monitoring and/or Recordkeeping Requirements

NONE

IV. Reporting Requirements

NONE

V. Testing Requirements

NONE

VI. Miscellaneous Requirements

NONE