



State of Ohio Environmental Protection Agency

**RE: FINAL PERMIT TO INSTALL
CARROLL COUNTY**

CERTIFIED MAIL

Street Address:

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

Mailing Address:
Lazarus Gov.
Center

Application No: 02-15863

DATE: 9/10/2002

Minerva Aluminum Company Inc
John Stiefel
PO Box 437 217 Roosevelt Ave
Minerva, OH 44657

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
236 East Town Street, Room 300
Columbus, Ohio 43215

Very truly yours,

Michael W. Ahern

Michael W. Ahern, Supervisor
Field Operations and Permit Section
Division of Air Pollution Control

CC: USEPA

NEDO



STATE OF OHIO ENVIRONMENTAL PROTECTION AGENCY

**Permit To Install
Terms and Conditions**

**Issue Date: 9/10/2002
Effective Date: 9/10/2002**

FINAL PERMIT TO INSTALL 02-15863

Application Number: 02-15863
APS Premise Number: 0210000107
Permit Fee: **\$1600**
Name of Facility: Minerva Aluminum Company Inc
Person to Contact: John Stiefel
Address: PO Box 437 217 Roosevelt Ave
Minerva, OH 44657

Location of proposed air contaminant source(s) [emissions unit(s)]:
217 Roosevelt Ave
Minerva, Ohio

Description of proposed emissions unit(s):
Modification of Aluminum Melting Furnace No. 1.

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



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 quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous

calendar quarters. See B.10 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 to the appropriate Ohio EPA District Office or local air agency every six months, i.e., 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. 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.

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 reissuance, or modification, or for denial of a permit renewal application.
- 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, reopened, 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, reopening 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 this Permit To Install.

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 of 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, the State, and citizens 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 To Install 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 thirty (30) 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.

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

1. Compliance Requirements

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

2. Reporting Requirements Related to Monitoring and Recordkeeping 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 quarterly, i.e., 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. Termination of Permit To Install

This permit to install shall terminate within eighteen months of the effective date of the permit to install 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)

The proposed emissions unit(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources cannot meet the requirements of this permit or cannot meet applicable standards.

If the construction of the proposed emissions unit(s) has already begun or has been completed prior to the date the Director of the Environmental Protection Agency approves the permit application and plans, the approval does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the approved plans. 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 the Permit to Install does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Approval of the plans in any case is not to be construed as an approval of the facility as constructed and/or completed. Moreover, issuance of the Permit to Install 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

The applicant shall provide Ohio EPA with a written certification (see enclosed form) 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., 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**

<u>Pollutant</u>	<u>Tons Per Year</u>
PE	16.89
HCl	1.76
Dioxin and Furans	6.57 E-07
CO	5.6
NOx	6.0

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

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 - Aluminum Melting
Furnace No 1, 4 mm
BTU/hr, Oxyfuel fired, max
capacity of 2,500 lbs/hr,
controlled by 15,000 acfm
baghouse which is shared
with Furnaces Nos 2, 3, and
4. Modification of PTI No
15-1009.

OAC Rule 3745-31-05(A)(3)

OAC Rule 3745-17-07(A)

Applicable Emissions
Limitations/Control Measures

stringent than the particulate emission limit established pursuant to OAC Rule 3745-31-05(A)(3).

OAC Rule
3745-17-11(A)(2)

Dioxins and furans (D/F) emissions shall not exceed 2.1 E-04 grains of D/F TEQ per ton of feed or charge to the furnace, and 1.64 E-07 ton per year. See Section A.I.2.c below.

Hydrogen Chloride (HCl) emissions shall not exceed 0.1 lb per hour and 0.44 ton per year.

Visible particulate emissions shall not exceed 10% opacity as a 6-minute average.

Particulate emissions shall not exceed 0.96 pound per hour and 4.22 tons per year. See Section A.I.2.a below.

Carbon Monoxide (CO) emissions from Oxyfuel combustion shall not exceed 0.32 lb per hour and 1.4 tons per year.

NO_x emissions from Oxyfuel combustion shall not exceed 0.34 lb per hour and 1.5 tons per year.

The requirements of this rule are equivalent to the requirements of OAC Rule 3745-31-05(A)(3).

The requirements of this rule are less stringent than the visible particulate emission limit established pursuant to OAC Rule 3745-31-05(A)(3).

The requirements of this rule are less

2. Additional Terms and Conditions

- 2.a** The particulate emissions from this emissions unit will be controlled by a fabric filter dust collector which also serves to control emissions from emission units P002, P007, and P008. The baghouse has a maximum stack exhaust flow rate of 15,000 scfm. The listed 0.96 lb/hour emissions rate is based upon a calculated one-fourth of the mass emission rate from said baghouse stack at a stack gas outlet grain load of no greater than 0.03 grains/dscf.
- 2.b** In accordance with the definitions listed in 40 CFR Part 63, Subpart RRR, Minerva Aluminum Co., Inc. is a secondary aluminum production facility that is an area source of HAPs. This emissions unit is a group 1 furnace that does not employ reactive fluxing within a secondary aluminum processing unit, per said definitions. Therefore, only the dioxins and furans emissions limitations, operation, monitoring, reporting and record keeping requirements apply.
- 2.c** Section 63.1503 of 40 CFR Part 63, Subpart RRR defines TEQ as the international method of expressing toxicity equivalents for dioxins and furans as defined in "Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxins and - Dibenzofurans (CDDs and dCDFs) and 1989 Update" (EPA-625/3-89-016).

II. Operational Restrictions

1. The permittee shall burn only Oxyfuel (a mix of natural gas with oxygen) in this emissions unit.
2. The permittee shall ensure that the fabric filter system meets the engineering standards for minimum exhaust rates as published by the American Conference of Governmental Industrial Hygienists (ACGIH) in Chapters 3 and 5 of "Industrial Ventilation: A Manual of Recommended Practice". Dilution air may be added to the emissions streams for the purpose of controlling the temperature at the inlet to the fabric filter. The permittee shall perform annual inspections of the baghouse to ensure that the systems continue to operate in accordance with ACGIH standards.

3. The permittee shall maintain the 3-hour block average inlet temperature for the fabric filter at or below the average temperature established during the performance test, plus 14 degrees C (plus 25 degrees F).
4. The permittee shall lime coat the fabric filter prior to the initial operation of this emissions unit. Lime shall be added to the fabric filter intermittently, thereafter. The schedule and rate of lime addition shall be proposed by the permittee, for approval by the Ohio EPA Northeast District Office, following the initial performance test. At a minimum, lime shall be added following each complete shakeout cycle of the fabric filter.
5. The pressure drop across the baghouse shall be maintained within the range of 2 to 10 inches of water while the emissions unit is in operation. The permittee shall install, calibrate, operate and maintain a bag leak detection system for the exhaust from the baghouse, as required in 40 CFR 63.1510(f)(1), or a continuous opacity monitoring system as required in paragraph (f)(2) of the same section.
6. The permittee shall apply a label to each group 1 furnace, P001, P002, P007, and P008, that identifies the allowable type of charge to the furnace, the applicable emissions limits, the inlet temperature range for the fabric filter, the established rate of lime addition to the fabric filter, the pressure drop range across the baghouse, and operating parameter ranges and requirements as established during the most recent stack test. The established parameters, operational standards, and work practices applicable to this emissions unit shall be documented in a written operation, maintenance, and monitoring plan.

III. Monitoring and/or Recordkeeping Requirements

1. For each day during which the permittee burns a fuel other than Oxyfuel, the permittee shall maintain a record of the type and quantity of fuel burned.
2. The permittee shall properly install, operate, and maintain equipment to monitor and record the 3-hour block average inlet temperature for the baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). Additional monitoring device specifications to be followed are listed in Section 63.1510 of 40 CFR Part 63, Subpart RRR.
3. The permittee shall maintain daily records of the intermittent addition of lime to the fabric filter. The date, time and rate, in pounds of lime injected, shall be recorded.
4. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop

IssuedEmissions Unit ID: **P001**

across the baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across the baghouse on a weekly basis.

5. The permittee shall maintain daily records of the number of hours of operation for this emissions unit.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than Oxyfuel was burned. Each report shall be submitted within 30 days after the deviation occurs.
2. The permittee shall submit quarterly reports that identify deviations (excursions) from the hourly emission limitations, the dioxin and furan emission limit per ton of charge, and/or operational restrictions that occurred during each quarter. The reports shall also include the probable cause of such deviations and any corrective actions or preventative measures which have been or will be taken.
3. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the 3-hour block average inlet temperature to the baghouse did not comply with the allowable range specified in Section A.II.2
4. The permittee shall submit deviation (excursion) reports that identify all periods of time for which the schedule and rate of lime addition to the fabric filter, as determined in Section A.II.3, was not met and the corrective action(s) taken to correct this rate.
5. The permittee shall submit pressure drop deviation (excursion) reports that identify all periods of time during which the pressure drop across the baghouse did not comply with the allowable range specified in Section A.II.4.
6. The permittee shall submit deviation (excursion) reports that identify all periods of time in which either the bag leak detection system was not operated as required in 40 CFR 63.1510(f)(1) or the continuous opacity monitoring system was not operated as required in 40 CFR 63.1510(f)(2).
7. The quarterly deviation reports shall be submitted as required in the General Terms and Conditions Section A.2. 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., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

V. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
 - a. Within 180 days of start-up of operations, emission testing shall be conducted to demonstrate compliance with the allowable mass emission rates for dioxins/furans, HCl, and particulate, using Methods 1 through 4, found in 40 CFR Part 60 Appendix A, and the Methods for each pollutant, as described below.
 - b. The emission tests shall be conducted while the four aluminum melting furnaces are operating at or near their maximum operating capacity, unless otherwise specified or approved by the Ohio EPA Northeast District Office.
 - c. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the tests, and the person(s) who will be conducting the tests. Failure to submit such notification for review and approval prior to the tests may result in the Ohio EPA Northeast District Office's refusal to accept the results of the emission tests.
 - d. Personnel from the Ohio EPA Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
 - e. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for submittal of the written report, where warranted, with prior approval from the Ohio EPA Northeast District Office.
 - f. During this testing the permittee shall establish the operating parameter value or range for the inlet gas temperature to the lime-injected fabric filters/baghouse serving emission units P001, P002, P007 and P008. The 3-hour block average temperature measurements for the 3 test runs shall be determined as follows:
 - i. the temperature at the inlet to the lime-injected fabric filter shall be continuously measured and recorded every 15 minutes during the HCl and Dioxins/Furan performance tests; and

- ii. the permittee shall determine and record the 15-minute block average temperatures for the three test runs and the 3-hour block average of the recorded temperatures measurements from the 3 test runs.

2. Emission Limitation:

Dioxins/Furans: 2.1 E-04 grains D/F TEQ per ton of feed or charge to the furnace.

Applicable Compliance Method:

The permittee shall conduct, or have conducted, D/F emission testing for this emissions unit to demonstrate compliance with the allowable mass emission rate in accordance with 40 CFR Part 60, Appendix A, Method 23 within 180 days of start-up of operation.

3. Emission Limitation:
Dioxins/Furans: 1.64 E-07 ton per year.

Applicable Compliance Method:

Compliance with the annual emission limit shall be determined by multiplying the number of hours of annual operation by the hourly emission rate determined by the D/F emission test and dividing by 2,000 lbs/ton.

4. Emission Limitation:
HCl: 0.1 pound per hour

Applicable Compliance Method:

The permittee shall conduct, or have conducted, HCl emission testing for this emissions unit to demonstrate compliance with the allowable mass emission rate in accordance with 40 CFR part 60, Appendix A, Method 26A within 180 days of start-up of operation.

5. Emission Limitation:
HCl: 0.44 ton per year

Applicable Compliance Method:

Compliance with the annual emission limit shall be determined by multiplying the number of hours of annual operation by the hourly emission rate determined by the HCl emission test and dividing by 2,000 lbs/ton.

6. Emission Limitation:
Visible Emissions: Visible particulate emissions shall not exceed 10 percent opacity, as a 6-minute average, at any time.

Applicable Compliance Method:

Compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC Rule 3745-17-03(B)(1).

7. Emission Limitation:
Particulates: 0.96 pound per hour

Applicable Compliance Method:

The permittee shall conduct, or have conducted, particulate emission testing for this emissions unit to demonstrate compliance with the allowable mass emission rate in accordance with 40 CFR

20

Miners

PTI A₁

Issued: 9/10/2002

Emissions Unit ID: **P001**

Part 60, Appendix A, Method 5 within 180 days of start-up of operation.

8. Emission Limitation:
Particulates: 4.22 tons per year

Applicable Compliance Method

Compliance with the annual emission limit shall be determined by multiplying the number of hours of annual operation by the hourly emission rate determined by the particulate emission test and dividing by 2,000 lbs/ton.

9. Emission Limitation:
CO: 0.32 pound per hour

Applicable Compliance Method:

To determine the actual hourly CO emission rate for the Oxyfuel combustion, the following equation shall be used:

$$E \text{ (lbs/hr)} = \text{Max rating of P001 (mmBtu/hr)} \times \text{sft}^3/1050 \text{ Btu} \times \text{EF (lbs/mmft}^3\text{)}$$

where:

$$E = \text{CO emissions rate, in pounds per hour}$$

$$\text{EF} = \text{Emission factor of 84 lbs/mmft}^3. \text{ EF is for natural gas (in lieu of EF specifically for Oxyfuel) and is taken from "Compilation of Air Pollutant Emission Factors", AP-42, Table 1.4-1.}$$

10. Emission Limitation:
CO: 1.4 tons per year

Applicable Compliance Method:

To determine the actual annual emissions rate for CO from the Oxyfuel combustion, the following equation shall be used:

$$E \text{ (tons/yr)} = \frac{\text{Max rating of P001 (mmBtu/hr)} \times \text{sft}^3/1050 \text{ Btu} \times \text{EF (lbs/mmft}^3\text{)}}{\text{hrs/yr} \times \text{ton}/2,000 \text{ lbs}}$$

where:

$$E = \text{CO emissions rate, in pounds per hour}$$

$$\text{EF} = \text{Emission factor of 84 lbs/mmft}^3. \text{ EF is for natural gas (in lieu of EF}$$

Emissions Unit ID: **P001**

specifically for Oxyfuel) and is taken from "Compilation of Air Pollutant Emission Factors", AP-42, Table 1.4-1.

hrs/yr = Total number of production hours per year calculated from the record as specified in Section C.5 of these terms and conditions.

- 11. Emission Limitation:
 NOx: 0.34 pound per hour

Applicable Compliance Method:

To determine the actual hourly NOx emission rate for the Oxyfuel combustion, the following equation shall be used:

$$E \text{ (lbs/hr)} = D \text{ (kg/ft}^3\text{)} \times \text{Flow rate (ft}^3\text{/hr)} \times \text{EF (g/kg)} \times \text{lb/450 grams}$$

where:

E = NOx emissions rate, in pounds per hour

D = Density of natural gas, which is 0.02 kg/ft³.

Flow rate = Flow rate of natural gas in the furnace. PTI application reports this rate to be 1,500 ft³ per hour.

EF = Emission factor. Report from BOC gases states the NOx emission from an Oxyfuel burner is 5.17 grams NOx per kg of natural gas used.

- 12. Emission Limitation:
 NOx: 1.5 tons per year

Applicable Compliance Method:

To determine the actual annual emissions rate for NOx from the Oxyfuel combustion, the following equation shall be used:

$$E \text{ (tons/yr)} = \text{HR (lbs/hr)} \times \text{hrs/yr} \times \text{ton/2,000 lbs}$$

where:

E = NOx emissions rate, in tons per year

HR = Hourly NOx emission rate, as determined in Section A.V.10 above.

hrs/yr = Total number of production hours per year calculated from the record as specified in Section A.III.5 of these terms and conditions.

23

Minerv

PTI A₁

Issued: 9/10/2002

Emissions Unit ID: **P001**

VI. Miscellaneous Requirements

1. The requirements of this Permit to Install (02-15863) shall supersede the requirements for this emissions unit contained in Permit to Install (15-1009) issued on January 6, 1993.

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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P001 - Aluminum Melting Furnace No 1, Oxyfuel fired, max capacity of 2,500 lbs/hr, controlled by 15,000 acfm baghouse which is shared with Furnaces Nos 2, 3, and 4. Modification to PTI No 15-1009.	None	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

25

Minery

PTI A₁

Issued: 9/10/2002

Emissions Unit ID: **P001**

None

VI. Miscellaneous Requirements

None

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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>
P002 - Aluminum Melting Furnace No 2, 4 mm BTU/hr, Oxyfuel fired, max capacity of 2,500 lbs/hr, controlled by 15,000 acfm baghouse which is shared with Furnaces Nos 1, 3, and 4. Modification of PTI No 15-1036.	OAC Rule 3745-31-05(A)(3)

40 CFR Part 63, Subpart
RRR

OAC Rule 3745-17-07(A)

OAC Rule
3745-17-11(A)(2)

Applicable Emissions
Limitations/Control Measures

Dioxins and furans (D/F) emissions shall not exceed 2.1 E-04 grains of D/F TEQ per ton of feed or charge to the furnace, and 1.64 E-07 ton per year. See Section A.I.2.c below.

HCl emissions shall not exceed 0.1 lb per hour and 0.44 ton per year.

Visible particulate emissions shall not exceed 10% opacity as a 6-minute average.

Particulate emissions shall not exceed 0.96 pound per hour and 4.22 tons per year. See Section A.I.2.a below.

CO emissions from Oxyfuel combustion shall not exceed 0.32 lb per hour and 1.4 tons per year.

NO_x emissions from Oxyfuel combustion shall not exceed 0.34 lb per hour and 1.5 tons per year.

The requirements of this rule are equivalent to the requirements of OAC Rule 3745-31-05(A)(3).

The requirements of this rule are less stringent than the visible particulate emission limit established pursuant to OAC Rule 3745-31-05(A)(3).

The requirements of this rule are less stringent than the particulate emission limit established pursuant to

OAC Rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2.a** The particulate emissions from this emissions unit will be controlled by a fabric filter dust collector which also serves to control emissions from emission units P001, P007, and P008. The baghouse has a maximum stack exhaust flow rate of 15,000 scfm. The listed 0.96 lb/hour emissions rate is based upon a calculated one-fourth of the mass emission rate from said baghouse stack at a stack gas outlet grain load of no greater than 0.03 grains/dscf.
- 2.b** In accordance with the definitions listed in 40 CFR Part 63, Subpart RRR, Minerva Aluminum Co., Inc. is a secondary aluminum production facility that is an area source of HAPs. This emissions unit is a group 1 furnace that does not employ reactive fluxing within a secondary aluminum processing unit, per said definitions. Therefore, only the dioxins and furans emissions limitations, operation, monitoring, reporting and record keeping requirements apply.
- 2.c** Section 63.1503 of 40 CFR Part 63, Subpart RRR defines TEQ as the international method of expressing toxicity equivalents for dioxins and furans as defined in "Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxins and - Dibenzofurans (CDDs and dCDFs) and 1989 Update" (EPA-625/3-89-016).

II. Operational Restrictions

1. The permittee shall burn only Oxyfuel (a mix of natural gas with oxygen) in this emissions unit.
2. The permittee shall ensure that the fabric filter system meets the engineering standards for minimum exhaust rates as published by the American Conference of Governmental Industrial Hygienists in Chapters 3 and 5 of "Industrial Ventilation: A Manual of Recommended Practice". Dilution air may be added to the emissions streams for the purpose of controlling the temperature at the inlet to the fabric filter.
3. The permittee shall maintain the 3-hour block average inlet temperature for the fabric filter at or below the average temperature established during the performance test, plus 14 degrees C (plus 25 degrees F).

4. The permittee shall lime coat the fabric filter prior to the initial operation of this emissions unit. Lime shall be added to the fabric filter intermittently, thereafter. The schedule and rate of lime addition shall be proposed by the permittee, for approval by the Ohio EPA Northeast District Office, following the initial performance test. At a minimum, lime shall be added following each complete shakeout cycle of the fabric filter.
5. The pressure drop across the baghouse shall be maintained within the range of 2 to 10 inches of water while the emissions unit is in operation. The permittee shall install, calibrate, operate and maintain a bag leak detection system for the exhaust from the baghouse, as required in 40 CFR 63.1510(f)(1), or a continuous opacity monitoring system as required in paragraph (f)(2) of the same section.
6. The permittee shall apply a label to each group 1 furnace, P001, P002, P007, and P008, that identifies the allowable type of charge to the furnace, the applicable emissions limits, the inlet temperature range for the fabric filter, the established rate of lime addition to the fabric filter, the pressure drop range across the baghouse, and operating parameter ranges and requirements as established during the most recent stack test. The established parameters, operational standards, and work practices applicable to this emissions unit shall be documented in a written operation, maintenance, and monitoring plan.

III. Monitoring and/or Recordkeeping Requirements

1. For each day during which the permittee burns a fuel other than Oxyfuel, the permittee shall maintain a record of the type and quantity of fuel burned.
2. The permittee shall properly install, operate, and maintain equipment to monitor and record the 3-hour block average inlet temperature for the baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). Additional monitoring device specifications to be followed are listed in Section 63.1510 of 40 CFR Part 63, Subpart RRR.
3. The permittee shall maintain daily records of the intermittent addition of lime to the fabric filter. The date, time and rate, in pounds of lime injected, shall be recorded.
4. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across the baghouse on a weekly basis.

5. The permittee shall maintain daily records of the number of hours of operation for this emissions unit.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than Oxyfuel was burned. Each report shall be submitted within 30 days after the deviation occurs.
2. The permittee shall submit quarterly reports that identify deviations (excursions) from the hourly emission limitations, the dioxin and furan emission limit per ton of charge, and/or operational restrictions that occurred during each quarter. The reports shall also include the probable cause of such deviations and any corrective actions or preventative measures which have been or will be taken.
3. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the 3-hour block average inlet temperature to the baghouse did not comply with the allowable range specified in Section A.II.2
4. The permittee shall submit deviation (excursion) reports that identify all periods of time for which the schedule and rate of lime addition to the fabric filter, as determined in Section A.II.3, was not met and the corrective action(s) taken to correct this rate.
5. The permittee shall submit pressure drop deviation (excursion) reports that identify all periods of time during which the pressure drop across the baghouse did not comply with the allowable range specified in Section A.II.4.
6. The permittee shall submit deviation (excursion) reports that identify all periods of time in which either the bag leak detection system was not operated as required in 40 CFR 63.1510(f)(1) or the continuous opacity monitoring system was not operated as required in 40 CFR 63.1510(f)(2).
7. The quarterly deviation reports shall be submitted as required in the General Terms and Conditions Section A.2. 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., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

V. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
 - a. Within 180 days of start-up of operations, emission testing shall be conducted to

demonstrate compliance with the allowable mass emission rates for dioxins/furans, HCl, and particulate, using Methods 1 through 4, found in 40 CFR Part 60 Appendix A, and the Methods for each pollutant, as described below.

- b. The emission tests shall be conducted while the four aluminum melting furnaces are operating at or near their maximum operating capacity, unless otherwise specified or approved by the Ohio EPA Northeast District Office.
- c. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the tests, and the person(s) who will be conducting the tests. Failure to submit such notification for review and approval prior to the tests may result in the Ohio EPA Northeast District Office's refusal to accept the results of the emission tests.
- d. Personnel from the Ohio EPA Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
- e. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for submittal of the written report, where warranted, with prior approval from the Ohio EPA Northeast District Office.
- f. During this testing the permittee shall establish the operating parameter value or range for the inlet gas temperature to the lime-injected fabric filters/baghouse serving emission units P001, P002, P007 and P008. The 3-hour block average temperature measurements for the 3 test runs shall be determined as follows:
 - i. the temperature at the inlet to the lime-injected fabric filter shall be continuously measured and recorded every 15 minutes during the HCl and Dioxins/Furan performance tests; and
 - ii. the permittee shall determine and record the 15-minute block average temperatures for the three test runs and the 3-hour block average of the recorded temperatures measurements from the 3 test runs.

2. Emission Limitation:
Dioxins/Furans: 2.1 E-04 grains D/F TEQ per ton of feed or charge to the furnace.

Applicable Compliance Method:
The permittee shall conduct, or have conducted, D/F emission testing for this emissions unit to demonstrate compliance with the allowable mass emission rate in accordance with 40 CFR Part 60, Appendix A, Method 23 within 180 days of start-up of operation.
3. Emission Limitation:
Dioxins/Furans: 1.64 E-07 ton per year.

Applicable Compliance Method:
Compliance with the annual emission limit shall be determined by multiplying the number of hours of annual operation by the hourly emission rate determined by the D/F emission test and dividing by 2,000 lbs/ton.
4. Emission Limitation:
HCl: 0.1 pound per hour

Applicable Compliance Method:
The permittee shall conduct, or have conducted, HCl emission testing for this emissions unit to demonstrate compliance with the allowable mass emission rate in accordance with 40 CFR part 60, Appendix A, Method 26A within 180 days of start-up of operation.
5. Emission Limitation:
HCl: 0.44 ton per year

Applicable Compliance Method:
Compliance with the annual emission limit shall be determined by multiplying the number of hours of annual operation by the hourly emission rate determined by the HCl emission test and dividing by 2,000 lbs/ton.
6. Emission Limitation:
Visible Emissions: Visible particulate emissions shall not exceed 10 percent opacity, as a 6-minute average, at any time.

Applicable Compliance Method:
Compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC Rule 3745-17-03(B)(1).
7. Emission Limitation:
Particulates: 0.96 pound per hour

34

Miners

PTI A₁

Issued: 9/10/2002

Emissions Unit ID: P002

Applicable Compliance Method:

The permittee shall conduct, or have conducted, particulate emission testing for this emissions unit to demonstrate compliance with the allowable mass emission rate in accordance with 40 CFR Part 60, Appendix A, Method 5 within 180 days of start-up of operation.

Issued

Emissions Unit ID: P002

8. Emission Limitation:
Particulates: 4.22 tons per year

Applicable Compliance Method

Compliance with the annual emission limit shall be determined by multiplying the number of hours of annual operation by the hourly emission rate determined by the particulate emission test and dividing by 2,000 lbs/ton.

9. Emission Limitation:
CO: 0.32 pound per hour

Applicable Compliance Method:

To determine the actual hourly CO emission rate for the Oxyfuel combustion, the following equation shall be used:

$$E \text{ (lbs/hr)} = \text{Max rating of P001 (mmBtu/hr)} \times \text{sft}^3/1050 \text{ Btu} \times \text{EF (lbs/mmft}^3\text{)}$$

where:

$$E = \text{CO emissions rate, in pounds per hour}$$

$$\text{EF} = \text{Emission factor of } 84 \text{ lbs/mmft}^3. \text{ EF is for natural gas (in lieu of EF specifically for Oxyfuel) and is taken from "Compilation of Air Pollutant Emission Factors", AP-42, Table 1.4-1.}$$

10. Emission Limitation:
CO: 1.4 tons per year

Applicable Compliance Method:

To determine the actual annual emissions rate for CO from the Oxyfuel combustion, the following equation shall be used:

$$E \text{ (tons/yr)} = \text{Max rating of P001 (mmBtu/hr)} \times \text{sft}^3/1050 \text{ Btu} \times \text{EF (lbs/mmft}^3\text{)} \times \text{hrs/yr} \times \text{ton}/2,000 \text{ lbs}$$

where:

$$E = \text{CO emissions rate, in pounds per hour}$$

$$\text{EF} = \text{Emission factor of } 84 \text{ lbs/mmft}^3. \text{ EF is for natural gas (in lieu of EF specifically for Oxyfuel) and is taken from "Compilation of Air Pollutant Emission Factors", AP-42, Table 1.4-1.}$$

$$\text{hrs/yr} = \text{Total number of production hours per year calculated from the record as}$$

specified in Section C.5 of these terms and conditions.

11. Emission Limitation:
NOx: 0.34 pound per hour

Applicable Compliance Method:

To determine the actual hourly NOx emission rate for the Oxyfuel combustion, the following equation shall be used:

$$E \text{ (lbs/hr)} = D \text{ (kg/ft}^3\text{)} \times \text{Flow rate (ft}^3\text{/hr)} \times \text{EF (g/kg)} \times \text{lb/450 grams}$$

where:

$$E = \text{NOx emissions rate, in pounds per hour}$$

$$D = \text{Density of natural gas, which is 0.02 kg/ft}^3\text{.}$$

$$\text{Flow rate} = \text{Flow rate of natural gas in the furnace. PTI application reports this rate to be 1,500 ft}^3\text{ per hour.}$$

$$\text{EF} = \text{Emission factor. Report from BOC gases states the NOx emission from an Oxyfuel burner is 5.17 grams NOx per kg of natural gas used.}$$

12. Emission Limitation:
NOx: 1.5 tons per year

Applicable Compliance Method:

To determine the actual annual emissions rate for NOx from the Oxyfuel combustion, the following equation shall be used:

$$E \text{ (tons/yr)} = \text{HR (lbs/hr)} \times \text{hrs/yr} \times \text{ton/2,000 lbs}$$

where:

$$E = \text{NOx emissions rate, in tons per year}$$

$$\text{HR} = \text{Hourly NOx emission rate, as determined in Section A.V.10 above.}$$

$$\text{hrs/yr} = \text{Total number of production hours per year calculated from the record as specified in Section A.III.5 of these terms and conditions.}$$

37

Minerv

PTI A₁

Issued: 9/10/2002

Emissions Unit ID: P002

VI. Miscellaneous Requirements

1. The requirements of this Permit to Install (02-15863) shall supersede the requirements for this emissions unit contained in Permit to Install (15-1036) issued on June 3, 1993.

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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P002 - Aluminum Melting Furnace No 2, Oxyfuel fired, max capacity of 2,500 lbs/hr, controlled by 15,000 acfm baghouse which is shared with Furnaces Nos 1, 3, and 4. Modification to PTI No 15-1036.	None	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

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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>
P007 - Aluminum Melting Furnace No 3, 4 mm BTU/hr, Oxyfuel fired, max capacity of 2,500 lbs/hr, controlled by 15,000 acfm baghouse which is shared with Furnaces Nos 1, 2, and 4. Modification of PTI No 17-1367.	OAC Rule 3745-31-05(A)(3)

	<u>Applicable Emissions Limitations/Control Measures</u>
40 CFR Part 63, Subpart RRR	Dioxins and furans (D/F) emissions shall not exceed 2.1 E-04 grains of D/F TEQ per ton of feed or charge to the furnace, and 1.64 E-07 ton per year. See Section A.I.2.c below.
OAC Rule 3745-17-07(A)	HCl emissions shall not exceed 0.1 lb per hour and 0.44 ton per year. Visible particulate emissions shall not exceed 10% opacity as a 6-minute average.
OAC Rule 3745-17-11(A)(2)	Particulate emissions shall not exceed 0.96 pound per hour and 4.22 tons per year. See Section A.I.2.a below. CO emissions from Oxyfuel combustion shall not exceed 0.32 lb per hour and 1.4 tons per year. NOx emissions from Oxyfuel combustion shall not exceed 0.34 lb per hour and 1.5 tons per year. The requirements of this rule are equivalent to the requirements of OAC Rule 3745-31-05(A)(3). The requirements of this rule are less stringent than the visible particulate emission limit established pursuant to OAC Rule 3745-31-05(A)(3). The requirements of this rule are less stringent than the particulate emission limit established pursuant to OAC Rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

2.a The particulate emissions from this emissions unit will be controlled by a fabric filter dust

collector which also serves to control emissions from emission units P001, P002, and P008. The baghouse has a maximum stack exhaust flow rate of 15,000 scfm. The listed 0.96 lb/hour emissions rate is based upon a calculated one-fourth of the mass emission rate from said baghouse stack at a stack gas outlet grain load of no greater than 0.03 grains/dscf.

- 2.b** In accordance with the definitions listed in 40 CFR Part 63, Subpart RRR, Minerva Aluminum Co., Inc. is a secondary aluminum production facility that is an area source of HAPs. This emissions unit is a group 1 furnace that does not employ reactive fluxing within a secondary aluminum processing unit, per said definitions. Therefore, only the dioxins and furans emissions limitations, operation, monitoring, reporting and record keeping requirements apply.
- 2.c** Section 63.1503 of 40 CFR Part 63, Subpart RRR defines TEQ as the international method of expressing toxicity equivalents for dioxins and furans as defined in "Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxins and - Dibenzofurans (CDDs and dCDFs) and 1989 Update" (EPA-625/3-89-016).

II. Operational Restrictions

1. The permittee shall burn only Oxyfuel (a mix of natural gas with oxygen) in this emissions unit.
2. The permittee shall ensure that the fabric filter system meets the engineering standards for minimum exhaust rates as published by the American Conference of Governmental Industrial Hygienists in Chapters 3 and 5 of "Industrial Ventilation: A Manual of Recommended Practice". Dilution air may be added to the emissions streams for the purpose of controlling the temperature at the inlet to the fabric filter.
3. The permittee shall maintain the 3-hour block average inlet temperature for the fabric filter at or below the average temperature established during the performance test, plus 14 degrees C (plus 25 degrees F).
4. The permittee shall lime coat the fabric filter prior to the initial operation of this emissions unit. Lime shall be added to the fabric filter intermittently, thereafter. The schedule and rate of lime addition shall be proposed by the permittee, for approval by the Ohio EPA Northeast District Office, following the initial performance test. At a minimum, lime shall be added following each complete shakeout cycle of the fabric filter.
5. The pressure drop across the baghouse shall be maintained within the range of 2 to 10 inches of

Issued

Emissions Unit ID: P007

water while the emissions unit is in operation. The permittee shall install, calibrate, operate and maintain a bag leak detection system for the exhaust from the baghouse, as required in 40 CFR 63.1510(f)(1), or a continuous opacity monitoring system as required in paragraph (f)(2) of the same section.

6. The permittee shall apply a label to each group 1 furnace, P001, P002, P007, and P008, that identifies the allowable type of charge to the furnace, the applicable emissions limits, the inlet temperature range for the fabric filter, the established rate of lime addition to the fabric filter, the pressure drop range across the baghouse, and operating parameter ranges and requirements as established during the most recent stack test. The established parameters, operational standards, and work practices applicable to this emissions unit shall be documented in a written operation, maintenance, and monitoring plan.

III. Monitoring and/or Recordkeeping Requirements

1. For each day during which the permittee burns a fuel other than Oxyfuel, the permittee shall maintain a record of the type and quantity of fuel burned.
2. The permittee shall properly install, operate, and maintain equipment to monitor and record the 3-hour block average inlet temperature for the baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). Additional monitoring device specifications to be followed are listed in Section 63.1510 of 40 CFR Part 63, Subpart RRR.
3. The permittee shall maintain daily records of the intermittent addition of lime to the fabric filter. The date, time and rate, in pounds of lime injected, shall be recorded.
4. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across the baghouse on a weekly basis.
5. The permittee shall maintain daily records of the number of hours of operation for this emissions unit.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than Oxyfuel was burned. Each report shall be submitted within 30 days after the deviation occurs.
2. The permittee shall submit quarterly reports that identify deviations (excursions) from the hourly emission limitations, the dioxin and furan emission limit per ton of charge, and/or operational restrictions that occurred during each quarter. The reports shall also include the probable cause of such deviations and any corrective actions or preventative measures which have been or will be taken.
3. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the 3-hour block average inlet temperature to the baghouse did not comply with the allowable range specified in Section A.II.2
4. The permittee shall submit deviation (excursion) reports that identify all periods of time for which the schedule and rate of lime addition to the fabric filter, as determined in Section A.II.3, was not met and the corrective action(s) taken to correct this rate.
5. The permittee shall submit pressure drop deviation (excursion) reports that identify all periods of time during which the pressure drop across the baghouse did not comply with the allowable range specified in Section A.II.4.
6. The permittee shall submit deviation (excursion) reports that identify all periods of time in which either the bag leak detection system was not operated as required in 40 CFR 63.1510(f)(1) or the continuous opacity monitoring system was not operated as required in 40 CFR 63.1510(f)(2).
7. The quarterly deviation reports shall be submitted as required in the General Terms and Conditions Section A.2. 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., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

V. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
 - a. Within 180 days of start-up of operations, emission testing shall be conducted to

Emissions Unit ID: P007

demonstrate compliance with the allowable mass emission rates for dioxins/furans, HCl, and particulate, using Methods 1 through 4, found in 40 CFR Part 60 Appendix A, and the Methods for each pollutant, as described below.

- b. The emission tests shall be conducted while the four aluminum melting furnaces are operating at or near their maximum operating capacity, unless otherwise specified or approved by the Ohio EPA Northeast District Office.
 - c. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the tests, and the person(s) who will be conducting the tests. Failure to submit such notification for review and approval prior to the tests may result in the Ohio EPA Northeast District Office's refusal to accept the results of the emission tests.
 - d. Personnel from the Ohio EPA Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
 - e. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for submittal of the written report, where warranted, with prior approval from the Ohio EPA Northeast District Office.
 - f. During this testing the permittee shall establish the operating parameter value or range for the inlet gas temperature to the lime-injected fabric filters/baghouse serving emission units P001, P002, P007 and P008. The 3-hour block average temperature measurements for the 3 test runs shall be determined as follows:
 - i. the temperature at the inlet to the lime-injected fabric filter shall be continuously measured and recorded every 15 minutes during the HCl and Dioxins/Furan performance tests; and
 - ii. the permittee shall determine and record the 15-minute block average temperatures for the three test runs and the 3-hour block average of the recorded temperatures measurements from the 3 test runs.
2. Emission Limitation:
- Dioxins/Furans: 2.1 E-04 grains D/F TEQ per ton of feed or charge to the furnace.

45

Miners

PTI A₁

Issued: 9/10/2002

Emissions Unit ID: P007

Applicable Compliance Method:

The permittee shall conduct, or have conducted, D/F emission testing for this emissions unit to demonstrate compliance with the allowable mass emission rate in accordance with 40 CFR Part 60, Appendix A, Method 23 within 180 days of start-up of operation.

3. Emission Limitation:
Dioxins/Furans: 1.64 E-07 ton per year.

Applicable Compliance Method:

Compliance with the annual emission limit shall be determined by multiplying the number of hours of annual operation by the hourly emission rate determined by the D/F emission test and dividing by 2,000 lbs/ton.

4. Emission Limitation:
HCl: 0.1 pound per hour

Applicable Compliance Method:

The permittee shall conduct, or have conducted, HCl emission testing for this emissions unit to demonstrate compliance with the allowable mass emission rate in accordance with 40 CFR part 60, Appendix A, Method 26A within 180 days of start-up of operation.

5. Emission Limitation:
HCl: 0.44 ton per year

Applicable Compliance Method:

Compliance with the annual emission limit shall be determined by multiplying the number of hours of annual operation by the hourly emission rate determined by the HCl emission test and dividing by 2,000 lbs/ton.

6. Emission Limitation:
Visible Emissions: Visible particulate emissions shall not exceed 10 percent opacity, as a 6-minute average, at any time.

Applicable Compliance Method:

Compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC Rule 3745-17-03(B)(1).

7. Emission Limitation:
Particulates: 0.96 pound per hour

Applicable Compliance Method:

The permittee shall conduct, or have conducted, particulate emission testing for this emissions unit to demonstrate compliance with the allowable mass emission rate in accordance with 40 CFR

Minerva Aluminum Company Inc

PTI Application: **02 15063**

Issued

Facility ID: **0210000107**

Emissions Unit ID: P007

Part 60, Appendix A, Method 5 within 180 days of start-up of operation.

8. Emission Limitation:
Particulates: 4.22 tons per year

Applicable Compliance Method

Compliance with the annual emission limit shall be determined by multiplying the number of hours of annual operation by the hourly emission rate determined by the particulate emission test and dividing by 2,000 lbs/ton.

9. Emission Limitation:
CO: 0.32 pound per hour

Applicable Compliance Method:

To determine the actual hourly CO emission rate for the Oxyfuel combustion, the following equation shall be used:

$$E \text{ (lbs/hr)} = \text{Max rating of P001 (mmBtu/hr)} \times \text{sft}^3/1050 \text{ Btu} \times \text{EF (lbs/mmft}^3\text{)}$$

where:

$$E = \text{CO emissions rate, in pounds per hour}$$

$$\text{EF} = \text{Emission factor of 84 lbs/mmft}^3. \text{ EF is for natural gas (in lieu of EF specifically for Oxyfuel) and is taken from "Compilation of Air Pollutant Emission Factors", AP-42, Table 1.4-1.}$$

10. Emission Limitation:
CO: 1.4 tons per year

Applicable Compliance Method:

To determine the actual annual emissions rate for CO from the Oxyfuel combustion, the following equation shall be used:

$$E \text{ (tons/yr)} = \frac{\text{Max rating of P001 (mmBtu/hr)} \times \text{sft}^3/1050 \text{ Btu} \times \text{EF (lbs/mmft}^3\text{)} \times \text{hrs/yr}}{\text{ton}/2,000 \text{ lbs}}$$

where:

$$E = \text{CO emissions rate, in pounds per hour}$$

$$\text{EF} = \text{Emission factor of 84 lbs/mmft}^3. \text{ EF is for natural gas (in lieu of EF}$$

specifically for Oxyfuel) and is taken from "Compilation of Air Pollutant Emission Factors", AP-42, Table 1.4-1.

hrs/yr = Total number of production hours per year calculated from the record as specified in Section C.5 of these terms and conditions.

11. Emission Limitation:
NOx: 0.34 pound per hour

Applicable Compliance Method:

To determine the actual hourly NOx emission rate for the Oxyfuel combustion, the following equation shall be used:

$$E \text{ (lbs/hr)} = D \text{ (kg/ft}^3\text{)} \times \text{Flow rate (ft}^3\text{/hr)} \times \text{EF (g/kg)} \times \text{lb/450 grams}$$

where:

E = NOx emissions rate, in pounds per hour

D = Density of natural gas, which is 0.02 kg/ft³.

Flow rate = Flow rate of natural gas in the furnace. PTI application reports this rate to be 1,500 ft³ per hour.

EF = Emission factor. Report from BOC gases states the NOx emission from an Oxyfuel burner is 5.17 grams NOx per kg of natural gas used.

12. Emission Limitation:
NOx: 1.5 tons per year

Applicable Compliance Method:

To determine the actual annual emissions rate for NOx from the Oxyfuel combustion, the following equation shall be used:

$$E \text{ (tons/yr)} = \text{HR (lbs/hr)} \times \text{hrs/yr} \times \text{ton/2,000 lbs}$$

where:

E = NOx emissions rate, in tons per year

HR = Hourly NO_x emission rate, as determined in Section A.V.10 above.

hrs/yr = Total number of production hours per year calculated from the record as specified in Section A.III.5 of these terms and conditions.

VI. Miscellaneous Requirements

1. The requirements of this Permit to Install (02-15863) shall supersede the requirements for this emissions unit contained in Permit to Install (17-1367) issued on June 12, 1995.

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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P007 - Aluminum Melting Furnace No 3, Oxyfuel fired, max capacity of 2,500 lbs/hr, controlled by 15,000 acfm baghouse which is shared with Furnaces Nos 1, 2, and 4. Modification to PTI No 17-1367.	None	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

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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>
P008 - Aluminum Melting Furnace No 4, Oxyfuel fired, max capacity of 2,500 lbs/hr, controlled by 15,000 acfm baghouse which is shared with Furnaces Nos 1, 2, and 3. Modification to PTI No 17-1438.	OAC Rule 3745-31-05(A)(3)

	<u>Applicable Emissions Limitations/Control Measures</u>	OAC Rule 3745-31-05(A)(3).
40 CFR Part 63, Subpart RRR	Dioxins and furans (D/F) emissions shall not exceed 2.1 E-04 grains of D/F TEQ per ton of feed or charge to the furnace, and 1.64 E-07 ton per year. See Section A.I.2.c below.	
OAC Rule 3745-17-07(A)	HCl emissions shall not exceed 0.1 lb per hour and 0.44 ton per year.	
OAC Rule 3745-17-11(A)(2)	Visible particulate emissions shall not exceed 10% opacity as a 6-minute average.	
	Particulate emissions shall not exceed 0.96 pound per hour and 4.22 tons per year. See Section A.I.2.a below.	
	CO emissions from Oxyfuel combustion shall not exceed 0.32 lb per hour and 1.4 tons per year.	
	NO _x emissions from Oxyfuel combustion shall not exceed 0.34 lb per hour and 1.5 tons per year.	
	The requirements of this rule are equivalent to the requirements of OAC Rule 3745-31-05(A)(3).	
	The requirements of this rule are less stringent than the visible particulate emission limit established pursuant to OAC Rule 3745-31-05(A)(3).	
	The requirements of this rule are less stringent than the particulate emission limit established pursuant to	

2. Additional Terms and Conditions

- 2.a** The particulate emissions from this emissions unit will be controlled by a fabric filter dust collector which also serves to control emissions from emission units P001, P002, and P007. The baghouse has a maximum stack exhaust flow rate of 15,000 scfm. The listed 0.96 lb/hour emissions rate is based upon a calculated one-fourth of the mass emission rate from said baghouse stack at a stack gas outlet grain load of no greater than 0.03 grains/dscf.
- 2.b** In accordance with the definitions listed in 40 CFR Part 63, Subpart RRR, Minerva Aluminum Co., Inc. is a secondary aluminum production facility that is an area sources of HAPs. This emissions unit is a group 1 furnace that does not employ reactive fluxing within a secondary aluminum processing unit, per said definitions. Therefore, only the dioxins and furans emissions limitations, operation, monitoring, reporting and record keeping requirements apply.
- 2.c** Section 63.1503 of 40 CFR Part 63, Subpart RRR defines TEQ as the international method of expressing toxicity equivalents for dioxins and furans as defined in "Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxins and - Dibenzofurans (CDDs and dCDFs) and 1989 Update" (EPA-625/3-89-016).

II. Operational Restrictions

1. The permittee shall burn only Oxyfuel (a mix of natural gas with oxygen) in this emissions unit.
2. The permittee shall ensure that the fabric filter system meets the engineering standards for minimum exhaust rates as published by the American Conference of Governmental Industrial Hygienists in Chapters 3 and 5 of "Industrial Ventilation: A Manual of Recommended Practice". Dilution air may be added to the emissions streams for the purpose of controlling the temperature at the inlet to the fabric filter.
3. The permittee shall maintain the 3-hour block average inlet temperature for the fabric filter at or below the average temperature established during the performance test, plus 14 degrees C (plus 25 degrees F).
4. The permittee shall lime coat the fabric filter prior to the initial operation of this emissions unit. Lime shall be added to the fabric filter intermittently, thereafter. The schedule and rate of lime addition shall be proposed by the permittee, for approval by the Ohio EPA Northeast District Office, following the initial performance test. At a minimum, lime shall be added following each

Issued

Emissions Unit ID: P008

complete shakeout cycle of the fabric filter.

5. The pressure drop across the baghouse shall be maintained within the range of 2 to 10 inches of water while the emissions unit is in operation. The permittee shall install, calibrate, operate and maintain a bag leak detection system for the exhaust from the baghouse, as required in 40 CFR 63.1510(f)(1), or a continuous opacity monitoring system as required in paragraph (f)(2) of the same section.
6. The permittee shall apply a label to each group 1 furnace, P001, P002, P007, and P008, that identifies the allowable type of charge to the furnace, the applicable emissions limits, the inlet temperature range for the fabric filter, the established rate of lime addition to the fabric filter, the pressure drop range across the baghouse, and operating parameter ranges and requirements as established during the most recent stack test. The established parameters, operational standards, and work practices applicable to this emissions unit shall be documented in a written operation, maintenance, and monitoring plan.

III. Monitoring and/or Recordkeeping Requirements

1. For each day during which the permittee burns a fuel other than Oxyfuel, the permittee shall maintain a record of the type and quantity of fuel burned.
2. The permittee shall properly install, operate, and maintain equipment to monitor and record the 3-hour block average inlet temperature for the baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). Additional monitoring device specifications to be followed are listed in Section 63.1510 of 40 CFR Part 63, Subpart RRR.
3. The permittee shall maintain daily records of the intermittent addition of lime to the fabric filter. The date, time and rate, in pounds of lime injected, shall be recorded.
4. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across the baghouse on a weekly basis.
5. The permittee shall maintain daily records of the number of hours of operation for this emissions unit.

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than Oxyfuel was burned. Each report shall be submitted within 30 days after the deviation occurs.
2. The permittee shall submit quarterly reports that identify deviations (excursions) from the hourly emission limitations, the dioxin and furan emission limit per ton of charge, and/or operational restrictions that occurred during each quarter. The reports shall also include the probable cause of such deviations and any corrective actions or preventative measures which have been or will be taken.
3. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the 3-hour block average inlet temperature to the baghouse did not comply with the allowable range specified in Section A.II.2
4. The permittee shall submit deviation (excursion) reports that identify all periods of time for which the schedule and rate of lime addition to the fabric filter, as determined in Section A.II.3, was not met and the corrective action(s) taken to correct this rate.
5. The permittee shall submit pressure drop deviation (excursion) reports that identify all periods of time during which the pressure drop across the baghouse did not comply with the allowable range specified in Section A.II.4.
6. The permittee shall submit deviation (excursion) reports that identify all periods of time in which either the bag leak detection system was not operated as required in 40 CFR 63.1510(f)(1) or the continuous opacity monitoring system was not operated as required in 40 CFR 63.1510(f)(2).
7. The quarterly deviation reports shall be submitted as required in the General Terms and Conditions Section A.2. 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., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

V. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
 - a. Within 180 days of start-up of operations, emission testing shall be conducted to

Emissions Unit ID: P008

demonstrate compliance with the allowable mass emission rates for dioxins/furans, HCl, and particulate, using Methods 1 through 4, found in 40 CFR Part 60 Appendix A, and the Methods for each pollutant, as described below.

- b. The emission tests shall be conducted while the four aluminum melting furnaces are operating at or near their maximum operating capacity, unless otherwise specified or approved by the Ohio EPA Northeast District Office.
 - c. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the tests, and the person(s) who will be conducting the tests. Failure to submit such notification for review and approval prior to the tests may result in the Ohio EPA Northeast District Office's refusal to accept the results of the emission tests.
 - d. Personnel from the Ohio EPA Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.
 - e. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for submittal of the written report, where warranted, with prior approval from the Ohio EPA Northeast District Office.
 - f. During this testing the permittee shall establish the operating parameter value or range for the inlet gas temperature to the lime-injected fabric filters/baghouse serving emission units P001, P002, P007 and P008. The 3-hour block average temperature measurements for the 3 test runs shall be determined as follows:
 - i. the temperature at the inlet to the lime-injected fabric filter shall be continuously measured and recorded every 15 minutes during the HCl and Dioxins/Furan performance tests; and
 - ii. the permittee shall determine and record the 15-minute block average temperatures for the three test runs and the 3-hour block average of the recorded temperatures measurements from the 3 test runs.
2. Emission Limitation:
- Dioxins/Furans: 2.1 E-04 grains D/F TEQ per ton of feed or charge to the furnace.

Minerva Aluminum Company Inc

PTI Application: **02 15063**

Issued

Facility ID: **0210000107**

Emissions Unit ID: P008

Applicable Compliance Method:

The permittee shall conduct, or have conducted, D/F emission testing for this emissions unit to demonstrate compliance with the allowable mass emission rate in accordance with 40 CFR Part 60, Appendix A, Method 23 within 180 days of start-up of operation.

3. Emission Limitation:
Dioxins/Furans: 1.64 E-07 ton per year.

Applicable Compliance Method:

Compliance with the annual emission limit shall be determined by multiplying the number of hours of annual operation by the hourly emission rate determined by the D/F emission test and dividing by 2,000 lbs/ton.

4. Emission Limitation:
HCl: 0.1 pound per hour

Applicable Compliance Method:

The permittee shall conduct, or have conducted, HCl emission testing for this emissions unit to demonstrate compliance with the allowable mass emission rate in accordance with 40 CFR part 60, Appendix A, Method 26A within 180 days of start-up of operation.

5. Emission Limitation:
HCl: 0.44 ton per year

Applicable Compliance Method:

Compliance with the annual emission limit shall be determined by multiplying the number of hours of annual operation by the hourly emission rate determined by the HCl emission test and dividing by 2,000 lbs/ton.

6. Emission Limitation:
Visible Emissions: Visible particulate emissions shall not exceed 10 percent opacity, as a 6-minute average, at any time.

Applicable Compliance Method:

Compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC Rule 3745-17-03(B)(1).

7. Emission Limitation:
Particulates: 0.96 pound per hour

Applicable Compliance Method:

The permittee shall conduct, or have conducted, particulate emission testing for this emissions unit to demonstrate compliance with the allowable mass emission rate in accordance with 40 CFR

60

Miners

PTI A₁

Issued: 9/10/2002

Emissions Unit ID: P008

Part 60, Appendix A, Method 5 within 180 days of start-up of operation.

8. Emission Limitation:
Particulates: 4.22 tons per year

Applicable Compliance Method

Compliance with the annual emission limit shall be determined by multiplying the number of hours of annual operation by the hourly emission rate determined by the particulate emission test and dividing by 2,000 lbs/ton.

9. Emission Limitation:
CO: 0.32 pound per hour

Applicable Compliance Method:

To determine the actual hourly CO emission rate for the Oxyfuel combustion, the following equation shall be used:

$$E \text{ (lbs/hr)} = \text{Max rating of P001 (mmBtu/hr)} \times \text{sft}^3/1050 \text{ Btu} \times \text{EF (lbs/mmft}^3\text{)}$$

where:

$$E = \text{CO emissions rate, in pounds per hour}$$

$$\text{EF} = \text{Emission factor of 84 lbs/mmft}^3. \text{ EF is for natural gas (in lieu of EF specifically for Oxyfuel) and is taken from "Compilation of Air Pollutant Emission Factors", AP-42, Table 1.4-1.}$$

10. Emission Limitation:
CO: 1.4 tons per year

Applicable Compliance Method:

To determine the actual annual emissions rate for CO from the Oxyfuel combustion, the following equation shall be used:

$$E \text{ (tons/yr)} = \frac{\text{Max rating of P001 (mmBtu/hr)} \times \text{sft}^3/1050 \text{ Btu} \times \text{EF (lbs/mmft}^3\text{)}}{\text{hrs/yr} \times \text{ton}/2,000 \text{ lbs}}$$

where:

$$E = \text{CO emissions rate, in pounds per hour}$$

$$\text{EF} = \text{Emission factor of 84 lbs/mmft}^3. \text{ EF is for natural gas (in lieu of EF}$$

specifically for Oxyfuel) and is taken from "Compilation of Air Pollutant Emission Factors", AP-42, Table 1.4-1.

hrs/yr = Total number of production hours per year calculated from the record as specified in Section C.5 of these terms and conditions.

11. Emission Limitation:
NOx: 0.34 pound per hour

Applicable Compliance Method:

To determine the actual hourly NOx emission rate for the Oxyfuel combustion, the following equation shall be used:

$$E \text{ (lbs/hr)} = D \text{ (kg/ft}^3\text{)} \times \text{Flow rate (ft}^3\text{/hr)} \times \text{EF (g/kg)} \times \text{lb/450 grams}$$

where:

E = NOx emissions rate, in pounds per hour

D = Density of natural gas, which is 0.02 kg/ft³.

Flow rate = Flow rate of natural gas in the furnace. PTI application reports this rate to be 1,500 ft³ per hour.

EF = Emission factor. Report from BOC gases states the NOx emission from an Oxyfuel burner is 5.17 grams NOx per kg of natural gas used.

12. Emission Limitation:
NOx: 1.5 tons per year

Applicable Compliance Method:

To determine the actual annual emissions rate for NOx from the Oxyfuel combustion, the following equation shall be used:

$$E \text{ (tons/yr)} = \text{HR (lbs/hr)} \times \text{hrs/yr} \times \text{ton/2,000 lbs}$$

where:

E = NOx emissions rate, in tons per year

Issued

Emissions Unit ID: P008

HR = Hourly NOx emission rate, as determined in Section A.V.10 above.

hrs/yr = Total number of production hours per year calculated from the record as specified in Section A.III.5 of these terms and conditions.

VI. Miscellaneous Requirements

1. The requirements of this Permit to Install (02-15863) shall supersede the requirements for this emissions unit contained in Permit to Install (17-1438) issued on November 13, 1995.

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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P008 - Aluminum Melting Furnace No 4, Oxyfuel fired, max capacity of 2,500 lbs/hr, controlled by 15,000 acfm baghouse which is shared with Furnaces Nos 1, 2, and 3. Modification to PTI No 17-1438.	None	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

65

Miners

PTI A₁

Issued: 9/10/2002

Emissions Unit ID: P008

None

VI. Miscellaneous Requirements

None