



State of Ohio Environmental Protection Agency

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

CERTIFIED MAIL

Street Address:

50 West Town Street, Suite 700

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

Mailing Address:

Lazarus Gov. Center
P.O. Box 1049

Application No: 03-13950

Fac ID: 0306000133

DATE: 9/18/2007

The Minster Machine Company
Lisa Geeslin
240 West Fifth Street
Minster, OH 45865-1065

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 of the Director is final and may be appealed to the Environmental Review Appeals Commission pursuant to Section 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. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of \$70.00 which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

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

Sincerely,

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

CC: USEPA

NWDO



**Permit To Install
Terms and Conditions**

**Issue Date: 9/18/2007
Effective Date: 9/18/2007**

FINAL PERMIT TO INSTALL 03-13950

Application Number: 03-13950
Facility ID: 0306000133
Permit Fee: **\$0**
Name of Facility: The Minster Machine Company
Person to Contact: Lisa Geeslin
Address: 240 West Fifth Street
Minster, OH 45865-1065

Location of proposed air contaminant source(s) [emissions unit(s)]:
**240 West Fifth Street
Minster, Ohio**

Description of proposed emissions unit(s):
Administrative Modification - Correct some BAT PE emissions limits, compliance determination language.

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

Chris Korleski
Director

Part I - GENERAL TERMS AND CONDITIONS

A. 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

The permittee shall submit required reports in the following manner:

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

3. Records Retention Requirements

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.

4. Inspections and Information Requests

The Director of the Ohio EPA, or an authorized representative of the Director, may, subject to the safety requirements of the permittee and without undue delay, enter upon

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the premises of this source at any reasonable time for purposes of making inspections, conducting tests, examining records or reports pertaining to any emission of air contaminants, and determining compliance with any applicable State air pollution laws and regulations and the terms and conditions of this permit. 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 verbal or written request, the permittee shall also furnish to the Director of the Ohio EPA, or an authorized representative of the Director, copies of records required to be kept by this permit.

5. 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 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. 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 emissions unit(s) that is (are) served by such control system(s).

6. 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.

7. 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.

8. 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.

9. Construction of New Sources(s)

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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.

10. 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.

11. Applicability

This Permit To Install is applicable only to the emissions unit(s) identified in the Permit To Install. Separate Permit To Install for the installation or modification of any other emissions unit(s) are required for any emissions unit for which a Permit To Install is required.

12. 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.

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13. Source Operation and Operating Permit Requirements After Completion of Construction

This facility is permitted to operate each source described by this Permit to Install for a period of up to one year from the date the source commenced operation. This permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within ninety (90) days after commencing operation of the emissions unit(s) covered by this permit.

14. 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.

15. 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.

B. 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>
stack PE	<i>0.90</i>
fugitive PE	<i>30.5</i>

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Issued: 9/18/2007

Emissions Unit ID: P914

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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>
P914 - 3 TPH electric induction furnace, 25 TPH inoculation process, 25 TPH refining process, and 25 TPH magnesium treatment process: modification to add ductile iron processing in addition to gray iron processing	OAC rule 3745-31-05(A)(3)
	OAC rule 3745-17-11(B)
	OAC rule 3745-17-07(A)
	OAC rule 3745-17-08(B)
	OAC rule 3745-17-07(B)

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<p>Applicable Emissions <u>Limitations/Control</u> <u>Measures</u></p>	<p>0.43 pound controlled PE/hour, 0.03 ton controlled PE/year; 0.04 ton uncontrolled PE/year</p>
<p>Control Requirements (See A.I.2.a)</p>	<p>visible stack PE shall not exceed 5% opacity, as a six-minute average.</p>
<p><u>gray iron:</u></p>	<p>visible fugitive PE shall not exceed 20 percent opacity, as a three-minute average.</p>
<p>melting - 1.8 tons uncontrolled particulate emissions(PE)/year</p>	<p>See A.I.2.b</p>
<p>charging - 0.13 pound controlled PE/hour, 0.29 ton controlled PE/year; 1.90 tons uncontrolled PE/year</p>	<p>See A.I.2.b</p>
<p>tapping - 5.3 tons uncontrolled PE/year</p>	<p>See A.I.2.c</p>
<p>inoculation - 6.0 tons uncontrolled PE/year</p>	<p>See A.I.2.d</p>
<p><u>ductile iron:</u></p>	<p>inoculation - 0.95 pound controlled PE/hour, 0.06 ton controlled PE/year; 0.09 tons uncontrolled PE/year</p>
<p>refining - 1.19 pounds controlled PE/hour, 0.07 ton controlled PE/year; 0.11 ton uncontrolled PE/year</p>	
<p>magnesium treatment -</p>	

2. Additional Terms and Conditions

- 2.a** The permittee shall employ best available technology (BAT) control requirements on this emissions unit. BAT for charging has been determined to be the use of a cyclone followed in series by a baghouse with a capture efficiency of 82 percent and a control efficiency of 99 percent. For ductile iron processing operations, a fume hood with a capture efficiency of 95 percent is also used to increase the capture efficiency of the cyclone/baghouse combination.
- 2.b** The emission limitation established under this applicable rule is less stringent than the emission limitation established in accordance with OAC rule 3745-31-05(A)(3).
- 2.c** The emissions unit is not located within an "Appendix A" area as identified in OAC rule 3745-17-08. Therefore, pursuant to OAC rule 3745-17-08(A), this emissions unit is exempt from the requirements of OAC rule 3745-17-08(B).
- 2.d** This emissions unit is exempt from the visible emissions limitation specified in OAC rule 3745-17-07(B), pursuant to OAC rule 3745-17-07(B)(11)(e).
- 2.e** The emission limitations for gray iron melting of 1.77 tons uncontrolled particulate emissions(PE)/year, gray iron charging of 0.04 pound controlled PE/hour, 0.09 ton controlled PE/year, 1.90 tons uncontrolled PE/year, gray iron tapping of 0.49 ton uncontrolled PE/year, ductile iron inoculation of 0.95 pound controlled PE/hour, 0.06 ton controlled PE/year, 1.8 tons uncontrolled PE/year, ductile iron refining of 1.19 pounds controlled PE/hour, 0.07 ton controlled PE/year, 2.25 tons uncontrolled PE/year, ductile iron magnesium treatment of 0.42 pound controlled PE/hour, 0.03 ton controlled PE/year, and 0.81 ton uncontrolled PE/year, were established for PTI purposes to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop recordkeeping and/or reporting requirements to ensure compliance with these limitations.

NOTE: These are batch operations and the annual limits are based upon the maximum possible annual production rates.

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack and for any visible fugitive particulate emissions from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
 - a. the location and color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and,
 - e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emission incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit, (b) identify all days during which any visible fugitive particulate emissions were observed from the from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit, and (c) describe any corrective actions taken to minimize or eliminate the visible particulate and/or visible fugitive particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall

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cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:

- a. Emission Limitation:
gray iron - melting - 1.8 tons uncontrolled particulate emissions (PE)/year

Applicable Compliance Method:

Multiply the maximum annual process weight rate (13,000 tons) by the appropriate emission factor from AP-42 Table 12.10-3, revised 1/95 (0.9 pound PE/ton). This value is then multiplied by a control factor attributed to the building enclosure $((100-70)/100)$ then divided by 2000 pounds/ton.

- b. Emission Limitations:
gray iron - charging - 0.13 pound controlled PE/hour, 0.29 ton controlled PE/year

Applicable Compliance Method:

To determine the emissions from charging, multiply the maximum hourly process weight rate (3 tons) by the appropriate emission factor from AP-42 Table 12.10-3, revised 1/95 [5.4 pounds PE/ton-- according to the permittee, 10 percent of the total emissions from the electric induction furnace are from "melting" which has an AP-42 emission factor of 0.9 pound PE/ton. 60 percent of the total emissions are from "charging" and 30 percent are from "tapping". To determine the emission factor from charging, the emissions factor for melting was extrapolated to determine the total emission factor from the electric induction furnace (9 pounds PE/ton). This value is multiplied by 0.60 to determine the emission factor for charging of 5.4 pounds PE/ton]. This value is then multiplied by a capture and control efficiency of 82 percent and 99 percent, respectively, are applied.

To determine the annual emissions from charging, multiply the maximum annual process weight rate (13,000 tons) by the appropriate emission factor from AP-42 Table 12.10-3, revised 1/95 [5.4 pounds PE/ton-- according to the permittee, 10 percent of the total emissions from the electric induction furnace are from "melting" which has an AP-42 emission factor of 0.9 pound PE/ton. 60 percent of the total emissions are from "charging" and 30 percent are from "tapping". To determine the emission factor from charging, the emissions factor for melting was extrapolated to determine the total emission factor from the electric

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induction furnace (9 pounds PE/ton). This value is multiplied by 0.60 to determine the emission factor for charging of 5.4 pounds PE/ton]. This value is then multiplied by a capture and control efficiency of 82 percent and 99 percent, respectively, are applied. Finally, this value is divided by 2000 pounds/ton.

- c. Emission Limitation:
gray iron - charging - 1.90 tons uncontrolled PE/year

Applicable Compliance Method:

To determine the emissions from charging, multiply the maximum annual process weight rate (13,000 tons) by the appropriate emission factor from AP-42 Table 12.10-3, revised 1/95 [5.4 pounds PE/ton-- according to the permittee, 10 percent of the total emissions from the electric induction furnace are from "melting" which has an AP-42 emission factor of 0.9 pound PE/ton. 60 percent of the total emissions are from "charging" and 30 percent are from "tapping". To determine the emission factor from charging, the emissions factor for melting was extrapolated to determine the total emission factor from the electric induction furnace (9 pounds PE/ton). This value is multiplied by 0.60 to determine the emission factor for charging of 5.4 pounds PE/ton]. This value is then multiplied by the amount that is not captured by the control system (0.18) then by a control factor attributed to the building enclosure $((100-70)/100)$. Then this value is divided by 2000 pounds/ton.

- d. **Emission Limitation:**
gray iron - tapping - 5.3 tons uncontrolled PE/year

Applicable Compliance Method:

To determine the emissions from tapping, multiply the maximum annual process weight rate (13,000 tons) by the appropriate emission factor from AP-42 Table 12.10-3, revised 1/95 [2.7 pounds PE/ton-- according to the permittee, 10 percent of the total emissions from the electric induction furnace are from "melting" which has an AP-42 emission factor of 0.9 pound PE/ton. 60 percent of the total emissions are from "charging" and 30 percent are from "tapping". To determine the emission factor from tapping, the emissions factor for melting was extrapolated to determine the total emission factor from the electric induction furnace (9 pounds PE/ton). This value is multiplied by 0.30 to determine the emission factor for charging of 2.7 pounds PE/ton]. This value is then multiplied by a control factor attributed to the building enclosure $((100-70)/100)$ then divided by 2000 pounds/ton.

- e. **Emission Limitation:**
gray iron - inoculation - 6.0 tons uncontrolled PE/year

Applicable Compliance Method:

To determine the emissions from inoculation, multiply the maximum annual process weight rate (10,000 tons) by the appropriate emission factor from FIRE (4.0 pounds PE/ton). This value is then multiplied by a control factor attributed to the building enclosure $((100-70)/100)$ then divided by 2000 pounds/ton.

- f. Emission Limitations:
ductile iron - inoculation - 0.95 pound controlled PE/hour, 0.06 ton controlled PE/year; 1.8 tons uncontrolled PE/year

Applicable Compliance Method:

To determine the emissions from inoculation, multiply the maximum hourly process weight rate (25 tons) by the appropriate emission factor from FIRE (4.0 pounds PE/ton). This value is then multiplied by 95 percent capture (0.95) and 99 percent control $((100-99)/100)$.

To determine the annual emissions from inoculation, multiply the maximum annual process weight rate (3000 tons) by the appropriate emission factor from FIRE (4.0 pounds PE/ton). This value is then multiplied by 95 percent capture (0.95) and 99 percent control $((100-99)/100)$ then divided by 2000 pounds/ton.

To determine the uncontrolled annual emissions, multiply the maximum annual process weight rate (3000 tons) by the appropriate emission factor from FIRE (4.0 pounds PE/ton). This value is then multiplied by the amount that is not captured by the control system (0.05) then by the control factor attributed to the building enclosure $((100-70)/100)$ then divided by 2000 pounds/ton.

- g. Emission Limitations:
ductile iron - refining - 1.19 pounds controlled PE/hour, 0.07 ton controlled PE/year; 2.25 tons uncontrolled PE/year

Applicable Compliance Method:

To determine the emissions from refining, multiply the maximum hourly process weight rate (25 tons) by the appropriate emission factor from FIRE (5.0 pounds PE/ton). This value is then multiplied by 95 percent capture (0.95) and 99 percent control $((100-99)/100)$.

To determine the annual emissions from refining, multiply the maximum annual process weight rate (3000 tons) by the appropriate emission factor from FIRE (5.0 pounds PE/ton). This value is then multiplied by 95 percent capture (0.95) and 99 percent control $((100-99)/100)$ then divided by 2000 pounds/ton.

To determine the uncontrolled annual emissions, multiply the maximum annual process weight rate (3000 tons) by the appropriate emission factor from FIRE (5.0 pounds PE/ton). This value is then multiplied by the amount that is not captured by the control system (0.05) then by the control factor attributed to the building enclosure $((100-70)/100)$ then divided by 2000 pounds/ton.

- h. Emission Limitations:
ductile iron - magnesium treatment - 0.43 pound controlled PE/hour, 0.03 ton controlled PE/year; 0.04 ton uncontrolled PE/year

Applicable Compliance Method:

To determine the emissions from magnesium treatment, multiply the maximum hourly process weight rate (25 tons) by the appropriate emission factor from FIRE (1.8 pounds PE/ton). This value is then multiplied by 95 percent capture (0.95) and 99 percent control $((100-99)/100)$.

To determine the annual emissions from refining, multiply the maximum annual process weight rate (3000 tons) by the appropriate emission factor from FIRE (1.8 pounds PE/ton). This value is then multiplied by 95 percent capture (0.95) and 99 percent control $((100-99)/100)$ then divided by 2000 pounds/ton.

To determine the uncontrolled annual emissions, multiply the maximum annual process weight rate (3000 tons) by the appropriate emission factor from FIRE (1.8 pounds PE/ton). This value is then multiplied by the amount that is not captured by the control system (0.05) then by the control factor attributed to the building enclosure $((100-70)/100)$ then divided by 2000 pounds/ton.

- i. **Emission Limitation:**
visible stack PE shall not exceed 5 percent opacity, as a six-minute average

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with the visible emissions limitation by using U.S. EPA Method 9, which is located in 40 CFR, Part 60, Appendix A.

- j. **Emission Limitation:**
visible fugitive PE shall not exceed 20 percent opacity, as a three-minute average

Applicable Compliance Method:

If required, compliance shall be determined by visible emission evaluations performed in accordance with USEPA Reference Method 9 as set forth in "Appendix A on Test Methods" in 40 CFR Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 2002, and the modifications listed in paragraph (B)(3)(a) and (B)(3)(b) of OAC rule 3745-17-03(B)(3).

VI. Miscellaneous Requirements

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None

Emissions Unit ID: P914

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>
P914 - 3 TPH electric induction furnace, 25 TPH inoculation process, 25 TPH refining process, and 25 TPH magnesium treatment process: modification to add ductile iron processing in addition to gray iron processing	None	None

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

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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>
P928 - 3 TPH electric induction furnace, 25 TPH inoculation process, 25 TPH refining process, and 25 TPH magnesium treatment process: modification to add ductile iron processing in addition to gray iron processing	OAC rule 3745-31-05(A)(3) OAC rule 3745-17-11(B) OAC rule 3745-17-07(A) OAC rule 3745-17-08(B) OAC rule 3745-17-07(B)

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Emissions Unit ID: P928

Applicable Emissions Limitations/Control Measures	0.43 pound controlled PE/hour, 0.03 ton controlled PE/year; 0.04 ton uncontrolled PE/year
Control Requirements (See A.I.2.a)	visible stack PE shall not exceed 5% opacity, as a six-minute average.
<u>gray iron:</u>	
melting - 1.8 tons uncontrolled particulate emissions(PE)/year	visible fugitive PE shall not exceed 20 percent opacity, as a three-minute average.
	See A.I.2.b
charging - 0.13 pound controlled PE/hour, 0.29 ton controlled PE/year; 1.90 tons uncontrolled PE/year	See A.I.2.b
	See A.I.2.c
	See A.I.2.d
tapping - 5.3 tons uncontrolled PE/year	
inoculation - 6.0 tons uncontrolled PE/year	
<u>ductile iron:</u>	
inoculation - 0.95 pound controlled PE/hour, 0.06 ton controlled PE/year; 0.09 tons uncontrolled PE/year	
refining - 1.19 pounds controlled PE/hour, 0.07 ton controlled PE/year; 0.11 ton uncontrolled PE/year	
magnesium treatment -	

2. Additional Terms and Conditions

- 2.a** The permittee shall employ best available technology (BAT) control requirements on this emissions unit. BAT for charging has been determined to be the use of a cyclone followed in series by a baghouse with a capture efficiency of 82 percent and a control efficiency of 99 percent. For ductile iron processing operations, a fume hood with a capture efficiency of 95 percent is also used to increase the capture efficiency of the cyclone/baghouse combination.
- 2.b** The emission limitation established under this applicable rule is less stringent than the emission limitation established in accordance with OAC rule 3745-31-05(A)(3).
- 2.c** The emissions unit is not located within an "Appendix A" area as identified in OAC rule 3745-17-08. Therefore, pursuant to OAC rule 3745-17-08(A), this emissions unit is exempt from the requirements of OAC rule 3745-17-08(B).
- 2.d** This emissions unit is exempt from the visible emissions limitation specified in OAC rule 3745-17-07(B), pursuant to OAC rule 3745-17-07(B)(11)(e).
- 2.e** The emission limitations for gray iron melting of 1.77 tons uncontrolled particulate emissions(PE)/year, gray iron charging of 0.04 pound controlled PE/hour, 0.09 ton controlled PE/year, 1.90 tons uncontrolled PE/year, gray iron tapping of 0.49 ton uncontrolled PE/year, ductile iron inoculation of 0.95 pound controlled PE/hour, 0.06 ton controlled PE/year, 1.8 tons uncontrolled PE/year, ductile iron refining of 1.19 pounds controlled PE/hour, 0.07 ton controlled PE/year, 2.25 tons uncontrolled PE/year, ductile iron magnesium treatment of 0.42 pound controlled PE/hour, 0.03 ton controlled PE/year, and 0.81 ton uncontrolled PE/year, were established for PTI purposes to reflect the potential to emit for this emissions unit. Therefore, it is not necessary to develop recordkeeping and/or reporting requirements to ensure compliance with these limitations.

NOTE: These are batch operations and the annual limits are based upon the maximum possible annual production rates.

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack and for any visible fugitive particulate emissions from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
 - a. the location and color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and,
 - e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emission incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit, (b) identify all days during which any visible fugitive particulate emissions were observed from the from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit, and (c) describe any corrective actions taken to minimize or eliminate the visible particulate and/or visible fugitive particulate

emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.

V. Testing Requirements

1. Compliance with the emission limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:

- a. Emission Limitation:
gray iron - melting - 1.8 tons uncontrolled particulate emissions (PE)/year

Applicable Compliance Method:

Multiply the maximum annual process weight rate (13,000 tons) by the appropriate emission factor from AP-42 Table 12.10-3, revised 1/95 (0.9 pound PE/ton). This value is then multiplied by a control factor attributed to the building enclosure $((100-70)/100)$ then divided by 2000 pounds/ton.

- b. Emission Limitations:
gray iron - charging - 0.13 pound controlled PE/hour, 0.29 ton controlled PE/year

Applicable Compliance Method:

To determine the emissions from charging, multiply the maximum hourly process weight rate (3 tons) by the appropriate emission factor from AP-42 Table 12.10-3, revised 1/95 [5.4 pounds PE/ton-- according to the permittee, 10 percent of the total emissions from the electric induction furnace are from "melting" which has an AP-42 emission factor of 0.9 pound PE/ton. 60 percent of the total emissions are from "charging" and 30 percent are from "tapping". To determine the emission factor from charging, the emissions factor for melting was extrapolated to determine the total emission factor from the electric induction furnace (9 pounds PE/ton). This value is multiplied by 0.60 to determine the emission factor for charging of 5.4 pounds PE/ton]. This value is then multiplied by a capture and control efficiency of 82 percent and 99 percent, respectively, are applied.

To determine the annual emissions from charging, multiply the maximum annual process weight rate (13,000 tons) by the appropriate emission factor from AP-42 Table 12.10-3, revised 1/95 [5.4 pounds PE/ton-- according to the permittee, 10 percent of the total emissions from the electric induction furnace are from

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"melting" which has an AP-42 emission factor of 0.9 pound PE/ton. 60 percent of the total emissions are from "charging" and 30 percent are from "tapping". To determine the emission factor from charging, the emissions factor for melting was extrapolated to determine the total emission factor from the electric induction furnace (9 pounds PE/ton). This value is multiplied by 0.60 to determine the emission factor for charging of 5.4 pounds PE/ton]. This value is then multiplied by a capture and control efficiency of 82 percent and 99 percent, respectively, are applied. Finally, this value is divided by 2000 pounds/ton.

- c. Emission Limitation:
gray iron - charging - 1.90 tons uncontrolled PE/year

Applicable Compliance Method:

To determine the emissions from charging, multiply the maximum annual process weight rate (13,000 tons) by the appropriate emission factor from AP-42 Table 12.10-3, revised 1/95 [5.4 pounds PE/ton-- according to the permittee, 10 percent of the total emissions from the electric induction furnace are from "melting" which has an AP-42 emission factor of 0.9 pound PE/ton. 60 percent of the total emissions are from "charging" and 30 percent are from "tapping". To determine the emission factor from charging, the emissions factor for melting was extrapolated to determine the total emission factor from the electric induction furnace (9 pounds PE/ton). This value is multiplied by 0.60 to determine the emission factor for charging of 5.4 pounds PE/ton]. This value is then multiplied by the amount that is not captured by the control system (0.18) then by a control factor attributed to the building enclosure $((100-70)/100)$. Then this value is divided by 2000 pounds/ton.

- d. **Emission Limitation:**
gray iron - tapping - 5.3 tons uncontrolled PE/year

Applicable Compliance Method:

To determine the emissions from tapping, multiply the maximum annual process weight rate (13,000 tons) by the appropriate emission factor from AP-42 Table 12.10-3, revised 1/95 [2.7 pounds PE/ton-- according to the permittee, 10 percent of the total emissions from the electric induction furnace are from "melting" which has an AP-42 emission factor of 0.9 pound PE/ton. 60 percent of the total emissions are from "charging" and 30 percent are from "tapping". To determine the emission factor from tapping, the emissions factor for melting was extrapolated to determine the total emission factor from the electric induction furnace (9 pounds PE/ton). This value is multiplied by 0.30 to determine the emission factor for charging of 2.7 pounds PE/ton]. This value is then multiplied by a control factor attributed to the building enclosure $((100-70)/100)$ then divided by 2000 pounds/ton.

- e. **Emission Limitation:**
gray iron - inoculation - 6.0 tons uncontrolled PE/year

Applicable Compliance Method:

To determine the emissions from inoculation, multiply the maximum annual process weight rate (10,000 tons) by the appropriate emission factor from FIRE (4.0 pounds PE/ton). This value is then multiplied by a control factor attributed to the building enclosure $((100-70)/100)$ then divided by 2000 pounds/ton.

- f. Emission Limitations:
ductile iron - inoculation - 0.95 pound controlled PE/hour, 0.06 ton controlled PE/year; 1.8 tons uncontrolled PE/year

Applicable Compliance Method:

To determine the emissions from inoculation, multiply the maximum hourly process weight rate (25 tons) by the appropriate emission factor from FIRE (4.0 pounds PE/ton). This value is then multiplied by 95 percent capture (0.95) and 99 percent control $((100-99)/100)$.

To determine the annual emissions from inoculation, multiply the maximum annual process weight rate (3000 tons) by the appropriate emission factor from FIRE (4.0 pounds PE/ton). This value is then multiplied by 95 percent capture (0.95) and 99 percent control $((100-99)/100)$ then divided by 2000 pounds/ton.

To determine the uncontrolled annual emissions, multiply the maximum annual process weight rate (3000 tons) by the appropriate emission factor from FIRE (4.0 pounds PE/ton). This value is then multiplied by the amount that is not captured by the control system (0.05) then by the control factor attributed to the building enclosure $((100-70)/100)$ then divided by 2000 pounds/ton.

- g. Emission Limitations:
ductile iron - refining - 1.19 pounds controlled PE/hour, 0.07 ton controlled PE/year; 2.25 tons uncontrolled PE/year

Applicable Compliance Method:

To determine the emissions from refining, multiply the maximum hourly process weight rate (25 tons) by the appropriate emission factor from FIRE (5.0 pounds PE/ton). This value is then multiplied by 95 percent capture (0.95) and 99 percent control $((100-99)/100)$.

To determine the annual emissions from refining, multiply the maximum annual process weight rate (3000 tons) by the appropriate emission factor from FIRE (5.0 pounds PE/ton). This value is then multiplied by 95 percent capture (0.95) and 99 percent control $((100-99)/100)$ then divided by 2000 pounds/ton.

To determine the uncontrolled annual emissions, multiply the maximum annual process weight rate (3000 tons) by the appropriate emission factor from FIRE (5.0 pounds PE/ton). This value is then multiplied by the amount that is not captured by the control system (0.05) then by the control factor attributed to the building enclosure $((100-70)/100)$ then divided by 2000 pounds/ton.

- h. Emission Limitations:
ductile iron - magnesium treatment - 0.43 pound controlled PE/hour, 0.03 ton controlled PE/year; 0.04 ton uncontrolled PE/year

Applicable Compliance Method:

To determine the emissions from magnesium treatment, multiply the maximum hourly process weight rate (25 tons) by the appropriate emission factor from FIRE (1.8 pounds PE/ton). This value is then multiplied by 95 percent capture (0.95) and 99 percent control $((100-99)/100)$.

To determine the annual emissions from refining, multiply the maximum annual process weight rate (3000 tons) by the appropriate emission factor from FIRE (1.8 pounds PE/ton). This value is then multiplied by 95 percent capture (0.95) and 99 percent control $((100-99)/100)$ then divided by 2000 pounds/ton.

To determine the uncontrolled annual emissions, multiply the maximum annual process weight rate (3000 tons) by the appropriate emission factor from FIRE (1.8 pounds PE/ton). This value is then multiplied by the amount that is not captured by the control system (0.05) then by the control factor attributed to the building enclosure $((100-70)/100)$ then divided by 2000 pounds/ton.

- i. **Emission Limitation:**
visible stack PE shall not exceed 5 percent opacity, as a six-minute average

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with the visible emissions limitation by using U.S. EPA Method 9, which is located in 40 CFR, Part 60, Appendix A.

- j. **Emission Limitation:**
visible fugitive PE shall not exceed 20 percent opacity, as a three-minute average

Applicable Compliance Method:

If required, compliance shall be determined by visible emission evaluations performed in accordance with USEPA Reference Method 9 as set forth in "Appendix A on Test Methods" in 40 CFR Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 2002, and the modifications listed in paragraph (B)(3)(a) and (B)(3)(b) of OAC rule 3745-17-03(B)(3).

VI. Miscellaneous Requirements

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None

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P928 - 3 TPH electric induction furnace, 25 TPH inoculation process, 25 TPH refining process, and 25 TPH magnesium treatment process: modification to add ductile iron processing in addition to gray iron processing	None	None

2. Additional Terms and Conditions

None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None