



State of Ohio Environmental Protection Agency

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

Street Address:

122 S. Front Street

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

Mailing Address:

Lazarus Gov. Center
P.O. Box 1049

Application No: 15-01392

DATE: 3/22/00

Ravenna Aluminum Inc - Canton Division
Glenn Johnson
4125 Mahoning Road NE
Canton, OH 44705

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,

Thomas G. Rigo, Manager
Field Operations and Permit Section
Division of Air Pollution Control

CC: USEPA

Canton LAA



STATE OF OHIO ENVIRONMENTAL PROTECTION AGENCY

Permit To Install

Issue Date: 3/22/00

FINAL PERMIT TO INSTALL 15-01392

Application Number: 15-01392
APS Premise Number: 1576000335
Permit Fee: **\$4400**
Name of Facility: Ravenna Aluminum Inc - Canton Division
Person to Contact: Glenn Johnson
Address: 4125 Mahoning Road NE
Canton, OH 44705

Location of proposed air contaminant source(s) [emissions unit(s)]:
4125 Mahoning Road NE
Canton, Ohio

Description of proposed emissions unit(s):
Modification of sand reclamation system and 11 core machines.

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. 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 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 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. 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 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)

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 are inadequate 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 prove to be inadequate 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 application must be made to the Director for the installation or modification of any other emissions unit(s).

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.

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 thirty (30) days after commencing operation of the emissions unit(s) covered by this permit.

14. Construction Compliance Certification

Ravenna Aluminum Inc - Canton Division

PTI Application: 15-01392

Issued: 3/22/00

Facility ID: 1576000335

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>
PM/PM10	11.74
SO2	15.6
VOC	2.331
CO	0.44
NOx	0.44

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. 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>
Core sand and binder mixing (Modification by switching to an acrylic-epoxy SO₂ coldbox binder system)	OAC rule 3745-31-05(A)(3)	Particulate and PM ₁₀ emissions shall not exceed: 0.41 lb/hr; and 1.8 tons/year
	OAC rule 3745-17-07(B)(1)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(B)(1) & 3745-17-08.
	OAC rule 3745-17-08	See section A.2.a below.
		See section A.2.b and A.2.c below.

2. Additional Terms and Conditions

- 2a. Visible particulate emissions of fugitive dust shall not exceed 20% opacity as a 3-minute average. For purposes of verifying compliance with this requirement, the visible particulate emissions shall be observed at any non-stack egress point from the building housing this emissions unit. These egress points shall include, but not be limited to, doorways, windows, and roof monitors.
- 2b. The permittee shall minimize or eliminate visible fugitive particulate emissions through the employment of reasonably available control measures (RACM). These measures shall include, but not be limited to, the following:
 - i. the installation and use of hoods, fans, and other equipment to adequately enclose, contain, capture, and vent the fugitive dust; and
 - ii. the collection efficiency shall be sufficient to minimize or eliminate visible

particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design.

The permittee's employment of RACM shall consist of no controls because of the minimal emissions.

- 2c. If the permittee can demonstrate compliance with the visible emissions restriction contained in section A.2.a above, the employment of the permittee's RACM, in accordance with the requirements of section A.2.b above, will be deemed adequate.

B. Operational Restrictions

None

C. Monitoring and/or Recordkeeping Requirements

None

D. Reporting Requirements

None

E. Testing Requirements

1. Compliance with the emission limitation(s) in sections A.1. and A.2. of these terms and conditions shall be determined in accordance with the following method(s):

- a. Emission Limitation:
Visible particulate emissions from any fugitive dust source shall not exceed twenty percent opacity as a three-minute average.

Applicable Compliance Method:

Compliance shall be determined through visible emissions observation performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures in OAC rule 3745-17-03(B)(3). The points of observation for visible emissions shall include any non-stack egress points from the building housing this emissions unit. Such egress points shall include, but are not limited to, doorways, windows, and roof monitors.

- c. Emission Limitation:
Particulate and PM₁₀ emissions shall not exceed:

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Raven

PTI A

Issued: 3/22/00

Emissions Unit ID: **F002**

0.41 lb/hr; and
1.8 tons/yr

Applicable Compliance Method:

Multiply the RACM emission factor of 0.3 lb PM/ton of sand times the maximum PWR of 4.59 tons/hr times 0.3 (70% building control factor) equals 0.41 lb PM/hr.

F. Miscellaneous Requirements

None

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. 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>	OAC rule 3745-17-07(A)(1)
Sand Reclamation System with fabric filter (equipment includes reclaimer, conveyors, vibrator, elevator, hopper and transporter) (Modification by switching to an acrylic-epoxy SO₂ coldbox binder system)	OAC rule 3745-31-05(A)(3)	OAC rule 3745-17-07(B)(1)
		OAC rule 3745-17-08
		OAC rule 3745-17-11

Ravenna Aluminum Inc - Canton Division

PTI Application: 15-01302

Issued**Facility ID: 1576000335**Emissions Unit ID: **P021**Applicable Emissions
Limitations/Control Measures

Particulate and PM₁₀ emissions shall not exceed:

0.1 lb/hr; and

0.44 ton/yr

Carbon Monoxide emissions shall not exceed:

0.1 lb/hr; and

0.44 ton/yr

Volatile Organic Compound emissions shall not exceed:

0.5 lb/hr; and

2.2 tons/yr

Nitrogen Oxides emissions shall not exceed:

0.1 lb/hr; and

0.44 ton/yr

The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-11(A)(1), 3745-17-07(B)(1), and 3745-17-08.

Visible emissions from any stack shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.

See section A.2.a below.

See sections A.2.b and A.2.c below.

The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2a. Visible particulate emissions of fugitive dust shall not exceed 20% opacity as a 3-minute average. For purposes of verifying compliance with this requirement, the visible particulate emissions shall be observed at any non-stack egress point from the building housing this emissions unit. These egress points shall include, but not be limited to, doorways, windows, and roof monitors.
- 2b. The permittee shall minimize or eliminate visible fugitive particulate emissions through the employment of reasonably available control measures (RACM). These measures shall include, but not be limited to, the following:
- i. the installation and use of hoods, fans, and other equipment to adequately enclose, contain, capture, and vent the fugitive dust; and
 - ii. the collection efficiency shall be sufficient to minimize or eliminate visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design.

At a minimum, the permittee's employment of RACM shall include the following:

This emissions unit consisting of a reclaimer, conveyor, screen, vibrator, elevator, belt, hopper and transporter shall be a completely enclosed system. Exhaust from this system at the reclaimer and the hopper shall be vented to a fabric filter. The capture efficiency shall be 99% or better.

- 2c. If the permittee can demonstrate compliance with the visible emissions restriction contained in section A.2.a above, the employment of the permittee's RACM, in accordance with the requirements of section A.2.b above, will be deemed adequate.

B. Operational Restrictions

1. The pressure drop across the fabric filter shall be maintained within the range of 2 to 8 inches of water while the emissions unit is in operation except during startup and initial loading of filters following filter change.
2. The permittee shall comply with the following procedure should any deviation from the above-specified pressure differential range be recorded by the permittee:
 - a. promptly determine if the deviation is being caused by a "malfunction," as that term is used in OAC rule 3745-15-06(B), or is not being caused by a malfunction;
 - b. if the deviation is being caused by a malfunction, comply with OAC rule 3745-15-06(B); and,
 - c. if the deviation is not being caused by a malfunction, take prompt action to correct the problem causing the deviation if the emissions unit controlled by the fabric filter will continue operation during the duration of the repairs to the fabric filter.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across the fabric filter 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 fabric filter on a once-per-shift basis.

D. Reporting Requirements

1. The permittee shall submit pressure drop deviation (excursion) reports that identify all periods of time during which the pressure drop across the fabric filter did not comply with the allowable range specified above except during startup and initial loading of filters following filter change.

E. Testing Requirements

1. Compliance with the emission limitation(s) in sections A.1. and A.2. of these terms and conditions shall be determined in accordance with the following method(s):
 - a. Emission Limitation:

Ravenna Aluminum Inc - Canton Division

PTI Application: 15-01302

Issued

Facility ID: 1576000335

Emissions Unit ID: **P021**

Visible emissions from any stack shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.

Applicable Compliance Method:

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

- b. Emission Limitation:
Visible particulate emissions from any fugitive dust source shall not exceed twenty percent opacity as a three-minute average.

Applicable Compliance Method:

Compliance shall be determined through visible emissions observation performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures in OAC rule 3745-17-03(B)(3). The points of observation for visible emissions shall include any non-stack egress points from the building housing this emissions unit. Such egress points shall include, but are not limited to, doorways, windows, and roof monitors.

- c. Emission Limitation:
Particulate and PM₁₀ emissions shall not exceed:
0.1 lb/hr; and
0.44 ton/yr

Applicable Compliance Method:

Methods 1-5 found in 40 CFR Part 60 Appendix A, if required.

- d. Emission Limitation:
Carbon Monoxide emissions shall not exceed:
0.1 lb/hr; and
0.44 ton/yr

Applicable Compliance Method:

Multiply the AP-42 emission factor of 84 lbs CO/MMCF times the maximum natural gas usage of 0.00075 MMCF/hr which equals 0.063 lb CO/hr.

- e. Emission Limitation:
VOC emissions shall not exceed:
0.5 lb/hr; and
2.2 tons/yr

Applicable Compliance Method:

Method 25 found in 40 CFR Part 60 Appendix A if required.

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Raven

PTI A

Issued: 3/22/00

Emissions Unit ID: **P021**

- f. Emission Limitation:
NO_x emissions shall not exceed:
0.1 lb/hr; and
0.44 ton/yr

Applicable Compliance Method:

Multiply the AP-42 emission factor of 100 lbs NO_x/MMCF times 0.00075 MMCF/hr equals 0.075 lb NO_x/hr.

F. Miscellaneous Requirements

- 1. This PTI replaces PTI 15-299 issued on April 23, 1986.

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

- 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>	
Sand Core Machine #1 with packed tower scrubber (Modification by switching to an acrylic-epoxy SO₂ coldbox binder system)	OAC rule 3745-31-05	OAC rule 3745-17-07(A)(1)
		OAC rule 3745-17-11
	OAC rule 3745-18-06(E)	

Applicable Emissions
Limitations/Control Measures

pursuant to OAC rule
3745-31-05(A)(3).

Particulate and PM₁₀ emissions shall not exceed:
0.01 lb/hr; and
0.04 ton/yr

Sulfur Dioxide emissions shall not exceed:
0.25 lb/hr; and
1.1 tons/yr

Volatile Organic Compound emissions shall not exceed:
0.004 lb/hr; and
0.016 ton/yr

The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A)(1).

See section A.2.a below.

The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

Visible emissions from any stack shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.

The emission limitation specified by this rule is less stringent than the emission limitation established

2. Additional Terms and Conditions

- 2a. At least 99% of the emissions from this emissions unit shall be captured and vented to a packed tower scrubber.

B. Operational Restrictions

1. The pH of the scrubber liquor shall be maintained within the range of 6.0 to 10.5.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor and record the pH of the scrubber liquor while the emissions unit is in operation. The pH monitor and recorder shall be installed, calibrated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

- a. the pH of the scrubber liquor, on a per-shift basis; and,
b. a log or record of operating time for the capture (collection) system, control device, monitoring equipment and the associated emissions unit.

D. Reporting Requirements

1. The permittee shall submit pH deviation (excursion) reports that identify all periods of time during which the scrubber liquor pH did not comply with the pH requirements specified above.

E. Testing Requirements

1. Compliance with the emission limitation(s) in sections A.1. and A.2. of these terms and conditions shall be determined in accordance with the following method(s):

- a. Emission Limitation:
Visible emissions from any stack shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.

Applicable Compliance Method:

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

- b. Emission Limitation:
Particulate and PM₁₀ emissions shall not exceed:
0.01 lb/hr; and
0.04 ton/yr

Applicable Compliance Method:

Fugitive Emissions

Multiply the emission factor of 0.35 lb/ton (Ohio EPA RACM Page 2-219) times the PWR of 0.6 ton/hr times 0.01 (99% capture efficiency), which equals 0.002 lb PM/PM₁₀/hr.

Stack Emissions

Multiply the emission factor of 0.35 lb/ton (Ohio EPA RACM Page 2-219) times the PWR of 0.6 ton/hr times 0.99 (99% capture efficiency) times 0.01 (99% control efficiency) which equals 0.002 lb PM/PM₁₀/hr.

Total

0.002 lb PM/PM₁₀/hr + 0.002 lb PM/PM₁₀/hr = 0.004 lb PM/PM₁₀/hr

- c. Emission Limitation:
SO₂ emissions shall not exceed:
0.25 lb/hr; and
1.1 tons/yr

Applicable Compliance Method:

Fugitive Emissions

Multiply the emission factor of 20.03 lbs SO₂/ton sand (from Walnut Street Stack tests conducted on 7/24/98) times the PWR of 0.6 ton/hr times 0.01 (99% capture eff.), which equals 0.12 lb SO₂/hr.

Stack Emissions

Multiply the emission factor of 20.03 lbs SO₂/ton sand (from Walnut Street Stack tests conducted on 7/24/98) times the PWR of 0.6 ton/hr times 0.99 (99% capture eff.) times 0.01 (99% control efficiency), which equals 0.12 lb SO₂/hr.

Total

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Raven

PTI A

Issued: 3/22/00

Emissions Unit ID: **P023**

$$0.12 \text{ lb SO}_2/\text{hr} + 0.12 \text{ lb SO}_2/\text{hr} = 0.24 \text{ lb SO}_2/\text{hr}$$

- d. Emission Limitation
VOC emissions shall not exceed:
0.004 lb/hr; and
0.016 ton/yr

Applicable Compliance Method:

Multiply the emission factor of 0.0062 lb VOC/ton sand (Ashland Chemical test data 8/20/97 + 20% safety factor) times the PWR of 0.6 ton/hr, which equals 0.0037 lb VOC/hr.

F. Miscellaneous Requirements

- 1. This permit to install replaces PTI 15-427 issued August 31, 1988.

Ravenna Aluminum Inc - Canton Division
PTI Application: 15-01392
Issued: 3/22/00

Facility ID: 1576000335
Emissions Unit ID: P024

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. 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>
Sand Core Machine #2 with packed tower scrubber (Modification by switching to an acrylic-epoxy SO₂ coldbox binder system)	OAC rule 3745-31-05(A)(3)
	OAC rule 3745-18-06(E)
	OAC rule 3745-17-07(A)(1)
	OAC rule 3745-17-11

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

Applicable Emissions
Limitations/Control Measures

Particulate and PM₁₀ emissions shall not exceed:

0.01 lb/hr; and

0.04 ton/yr

Sulfur Dioxide emissions shall not exceed:

0.25 lb/hr; and

1.1 tons/yr

Volatile Organic Compound emissions shall not exceed:

0.004 lb/hr; and

0.016 ton/yr

The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A)(1).

See section A.2.a below.

The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

Visible emissions from any stack shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.

The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule

Ravenna Aluminum Inc - Canton Division
PTI Application: 15-01392
Issued: 3/22/00

Facility ID: 1576000335
Emissions Unit ID: P024

2. Additional Terms and Conditions

- 2a. At least 99% of the emissions from this emissions unit shall be captured and vented to a packed tower scrubber.

B. Operational Restrictions

1. The pH of the scrubber liquor shall be maintained within the range of 6.0 to 10.5.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor and record the pH of the scrubber liquor while the emissions unit is in operation. The pH monitor and recorder shall be installed, calibrated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

- a. the pH of the scrubber liquor, on a per shift basis; and,
b. a log or record of operating time for the capture (collection) system, control device, monitoring equipment and the associated emissions unit.

D. Reporting Requirements

1. The permittee shall submit pH deviation (excursion) reports that identify all periods of time during which the scrubber liquor pH did not comply with the pH requirements specified above.

E. Testing Requirements

1. Compliance with the emission limitation(s) in sections A.1. and A.2. of these terms and conditions shall be determined in accordance with the following method(s):

Ravenna Aluminum Inc - Canton Division
PTI Application: 15-01392
Issued: 3/22/00

Facility ID: 1576000335
Emissions Unit ID: P024

- a. Emission Limitation:
 Visible emissions from any stack shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.

Applicable Compliance Method:

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

- b. Emission Limitation:
 Particulate and PM₁₀ emissions shall not exceed:
 0.01 lb/hr; and
 0.04 ton/yr

Applicable Compliance Method:

Fugitive Emissions

Multiply the emission factor of 0.35 lb/ton (Ohio EPA RACM Page 2-219) times the PWR of 0.6 ton/hr times 0.01 (99% capture efficiency), which equals 0.002 lb PM/PM₁₀/hr.

Stack Emissions

Multiply the emission factor of 0.35 lb/ton (Ohio EPA RACM Page 2-219) times the PWR of 0.6 ton/hr times 0.99 (99% capture efficiency) times 0.01 (99% control efficiency), which equals 0.002 lb PM/PM₁₀/hr.

Total

0.002 lb PM/PM₁₀/hr + 0.002 lb PM/PM₁₀/hr = 0.004 lb PM/PM₁₀/hr

- c. Emission Limitation:
 SO₂ emissions shall not exceed:
 0.25 lb/hr; and
 1.1 tons/yr

Applicable Compliance Method:

Fugitive Emissions

Multiply the emission factor of 20.03 lbs SO₂/ton sand (from Walnut Street Stack tests conducted on 7/24/98) times the PWR of 0.6 ton/hr times 0.01 (99% capture eff.), which equals 0.12 lb SO₂/hr.

Stack Emissions

Multiply the emission factor of 20.03 lbs SO₂/ton sand (from Walnut Street Stack tests conducted on 7/24/98) times the PWR of 0.6 ton/hr times 0.99 (99% capture eff.) times 0.01 (99% control efficiency), which equals 0.12 lb SO₂/hr.

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Ravenna Aluminum Inc - Canton Division

PTI Application: 15-01392

Issued: 3/22/00

Facility ID: 1576000335

Emissions Unit ID: P024

Total

$0.12 \text{ lb SO}_2/\text{hr} + 0.12 \text{ lb SO}_2/\text{hr} = 0.24 \text{ lb SO}_2/\text{hr}$

Ravenna Aluminum Inc - Canton Division
PTI Application: 15-01392
Issued: 3/22/00

Facility ID: 1576000335
Emissions Unit ID: P024

- d. Emission Limitation
VOC emissions shall not exceed:
0.004 lb/hr; and
0.016 ton/yr

Applicable Compliance Method:

Multiply the emission factor of 0.0062 lb VOC/ton sand (Ashland Chemical test data 8/20/97 + 20% safety factor) times the PWR of 0.6 ton/hr, which equals 0.0037 lb VOC/hr.

F. Miscellaneous Requirements

- 1. This permit to install replaces PTI 15-427 issued August 31, 1988.

Ravenna Aluminum Inc - Canton Division
PTI Application: 15-01392
Issued: 3/22/00

Facility ID: 1576000335
Emissions Unit ID: P025

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. 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>	
Sand Core Machine #3 with packed tower scrubber (Modification by switching to an acrylic-epoxy SO₂ coldbox binder system)	OAC rule 3745-31-05(A)(3)	OAC rule 3745-18-06(E)
		OAC rule 3745-17-07(A)(1)
		OAC rule 3745-17-11

Ravenna Aluminum Inc - Canton Division
PTI Application: 15-01392
Issued: 3/22/00

Facility ID: 1576000335
Emissions Unit ID: P025

Applicable Emissions
Limitations/Control Measures

Particulate and PM₁₀ emissions shall not exceed:
0.01 lb/hr; and
0.04 ton/yr

Sulfur Dioxide emissions shall not exceed:
0.25 lb/hr; and
1.1 tons/yr

Volatile Organic Compound emissions shall not exceed:
0.004 lb/hr; and
0.016 ton/yr

The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A)(1).

See section A.2.a below.

The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

Visible emissions from any stack shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.

The emission limitation specified by this rule is less stringent than the emission limitation established

pursuant to OAC rule 3745-31-05(A)(3).

Ravenna Aluminum Inc - Canton Division
PTI Application: 15-01392
Issued: 3/22/00

Facility ID: 1576000335
Emissions Unit ID: P025

2. Additional Terms and Condition

- 2a. At least 99% of the emissions from this emissions unit shall be captured and vented to a packed tower scrubber.

B. Operational Restrictions

1. The pH of the scrubber liquor shall be maintained within the range of 6.0 to 10.5.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor and record the pH of the scrubber liquor while the emissions unit is in operation. The pH monitor and recorder shall be installed, calibrated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

- a. the pH of the scrubber liquor, on a per shift basis; and,
b. a log or record of operating time for the capture (collection) system, control device, monitoring equipment and the associated emissions unit.

D. Reporting Requirements

1. The permittee shall submit pH deviation (excursion) reports that identify all periods of time during which the scrubber liquor pH did not comply with the pH requirements specified above.

E. Testing Requirements

1. Compliance with the emission limitation(s) in sections A.1. and A.2. of these terms and conditions shall be determined in accordance with the following method(s):

Ravenna Aluminum Inc - Canton Division

PTI Application: 15-01392

Issued: 3/22/00

Facility ID: 1576000335

Emissions Unit ID: P025

- a. Emission Limitation:
Visible emissions from any stack shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.

Applicable Compliance Method:

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

- b. Emission Limitation:
Particulate and PM₁₀ emissions shall not exceed:
0.01 lb/hr; and
0.04 ton/yr

Applicable Compliance Method:

Fugitive Emissions

Multiply the emission factor of 0.35 lb/ton (Ohio EPA RACM Pages 2-219) times the PWR of 0.6 ton/hr times 0.01 (99% capture efficiency), which equals 0.002 lb PM/PM₁₀/hr

Stack Emissions

Multiply the emission factor of 0.35 lb/ton (Ohio EPA RACM Page 2-219) times the PWR of 0.6 ton/hr times 0.99 (99% capture efficiency) times 0.01 (99% control efficiency), which equals 0.002 lb PM/PM₁₀/hr.

Total

0.002 lb PM/PM₁₀/hr + 0.002 lb PM/PM₁₀/hr = 0.004 lb PM/PM₁₀/hr

- c. Emission Limitation:
SO₂ emissions shall not exceed
0.25 lb/hr; and
1.1 tons/yr

Applicable Compliance Method:

Fugitive Emissions

Multiply the emission factor of 20.03 lbs SO₂/ton sand (from Walnut Street Stack tests conducted on 7/24/98) times the PWR of 0.6 ton/hr times 0.01 (99% capture eff.), which equals 0.12 lb SO₂/hr.

Stack Emissions

Multiply the emission factor of 20.03 lbs SO₂/ton sand (from Walnut Street Stack tests conducted on 7/24/98) times the PWR of 0.6 ton/hr times 0.99 (99% capture eff.) times 0.01 (99% control efficiency), which equals 0.12 lb SO₂/hr.

Ravenna Aluminum Inc - Canton Division

PTI Application: 15-01392

Issued: 3/22/00

Facility ID: 1576000335

Emissions Unit ID: P025

Total

$$0.12 \text{ lb SO}_2/\text{hr} + 0.12 \text{ lb SO}_2/\text{hr} = 0.24 \text{ lb SO}_2/\text{hr}$$

Ravenna Aluminum Inc - Canton Division

PTI Application: 15-01392

Issued: 3/22/00

Facility ID: 1576000335

Emissions Unit ID: P025

- d. Emission Limitation
VOC emissions shall not exceed:
0.004 lb/hr; and
0.016 ton/yr

Applicable Compliance Method:

Multiply the emission factor of 0.0062 lb VOC/ton sand (Ashland Chemical test data 8/20/97 + 20% safety factor) times the PWR of 0.6 ton/hr, which equals 0.0037 lb VOC/hr.

F. Miscellaneous Requirements

- 1. This permit to install replaces PTI 15-427 issued August 31, 1988.

Ravenna Aluminum Inc - Canton Division
PTI Application: 15-01392
Issued: 3/22/00

Facility ID: 1576000335
Emissions Unit ID: P026

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

- 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>	
Sand Core Machine #4 with packed tower scrubber (Modification by switching to an acrylic-epoxy SO₂ coldbox binder system)	OAC rule 3745-31-05(A)(3)	OAC rule 3745-17-07(A)(1)
		OAC rule 3745-17-11
	OAC rule 3745-18-06(E)	

Ravenna Aluminum Inc - Canton Division

PTI Application: 15-01392

Issued: 3/22/00

Facility ID: 1576000335

Emissions Unit ID: P026

Applicable Emissions
Limitations/Control Measures

Particulate and PM₁₀ emissions shall not exceed:

0.01 lb/hr; and

0.04 ton/yr

Sulfur Dioxide emissions shall not exceed:

0.25 lb/hr; and

1.1 tons/yr

Volatile Organic Compound emissions shall not exceed:

0.004 lb/hr

0.016 ton/yr

The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A)(1).

See section A.2.a below.

The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

Visible emissions from any stack shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.

The emission limitation specified by this rule is less stringent than the emission limitation established

pursuant to OAC rule
3745-31-05(A)(3).

Ravenna Aluminum Inc - Canton Division
PTI Application: 15-01392
Issued: 3/22/00

Facility ID: 1576000335
Emissions Unit ID: P026

2. Additional Terms and Conditions

- 2a. At least 99% of the emissions from this emissions unit shall be captured and vented to a packed tower scrubber.

B. Operational Restrictions

1. The pH of the scrubber liquor shall be maintained within the range of 6.0 to 10.5.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor and record the pH of the scrubber liquor while the emissions unit is in operation. The pH monitor and recorder shall be installed, calibrated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

- a. the pH of the scrubber liquor, on a per shift basis; and,
b. a log or record of operating time for the capture (collection) system, control device, monitoring equipment and the associated emissions unit.

D. Reporting Requirements

1. The permittee shall submit pH deviation (excursion) reports that identify all periods of time during which the scrubber liquor pH did not comply with the pH requirements specified above.

E. Testing Requirements

1. Compliance with the emission limitation(s) in sections A.1. and A.2. of these terms and conditions shall be determined in accordance with the following method(s):

Ravenna Aluminum Inc - Canton Division
PTI Application: 15-01392
Issued: 3/22/00

Facility ID: 1576000335

Emissions Unit ID: **P026**

- a. Emission Limitation:
 Visible emissions from any stack shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.

Applicable Compliance Method:

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

- b. Emission Limitation:
 Particulate and PM10 emissions shall not exceed:
 0.01 lb/hr; and
 0.04 ton/yr

Applicable Compliance Method:

Fugitive Emissions

Multiply the emission factor of 0.35 lb/ton (Ohio EPA RACM Page 2-219) times the PWR of 0.6 ton/hr times 0.01 (99% capture efficiency), which equals 0.002 lb PM/PM₁₀/hr

Stack Emissions

Multiply the emission factor of 0.35 lb/ton (Ohio EPA RACM Page 2-219) times the PWR of 0.6 ton/hr times 0.99 (99% capture efficiency) times 0.01 (99% control efficiency), which equals 0.002 lb PM/PM₁₀/hr.

Total

0.002 lb PM/PM₁₀/hr + 0.002 lb PM/PM₁₀/hr = 0.004 lb PM/PM₁₀/hr

- c. Emission Limitation:
 SO₂ emissions shall not exceed:
 0.25 lb/hr; and
 1.1 tons/yr

Applicable Compliance Method:

Fugitive Emissions

Multiply the emission factor of 20.03 lbs SO₂/ton sand (from Walnut Street Stack tests conducted on 7/24/98) times the PWR of 0.6 ton/hr times 0.01 (99% capture eff.), which equals 0.12 lb SO₂/hr.

Stack Emissions

Multiply the emission factor of 20.03 lbs SO₂/ton sand (from Walnut Street Stack tests conducted on 7/24/98) times the PWR of 0.6 ton/hr times 0.99 (99% capture eff.) times 0.01 (99% control efficiency), which equals 0.12 lb SO₂/hr.

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Ravenna Aluminum Inc - Canton Division

PTI Application: 15-01392

Issued: 3/22/00

Facility ID: 1576000335

Emissions Unit ID: P026

Total

$0.12 \text{ lb SO}_2/\text{hr} + 0.12 \text{ lb SO}_2/\text{hr} = 0.24 \text{ lb SO}_2/\text{hr}$

Ravenna Aluminum Inc - Canton Division

PTI Application: 15-01392

Issued: 3/22/00

Facility ID: 1576000335

Emissions Unit ID: P026

- d. Emission Limitation
VOC emissions shall not exceed:
0.004 lb/hr; and
0.016 ton/yr

Applicable Compliance Method:

Multiply the emission factor of 0.0062 lb VOC/ton sand (Ashland Chemical test data 8/20/97 + 20% safety factor) times the PWR of 0.6 ton/hr, which equals 0.0037 lb VOC/hr.

F. Miscellaneous Requirements

- 1. This permit to install replaces PTI 15-427 issued August 31, 1988.

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. 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>	
Sand Core Machine #5 with packed tower scrubber (Modification by switching to an acrylic-epoxy SO₂ coldbox binder system)	OAC rule 3745-31-05(A)(3)	OAC rule 3745-17-07(A)(1)
		OAC rule 3745-17-11
	OAC rule 3745-18-06(E)	

Raven

PTI A

Issued: 3/22/00

Emissions Unit ID: **P027**

Applicable Emissions
Limitations/Control Measures

Particulate and PM₁₀ emissions shall not exceed:

0.01 lb/hr; and

0.04 ton/yr

Sulfur Dioxide emissions shall not exceed:

0.25 lb/hr; and

1.1 tons/yr

Volatile Organic Compound emissions shall not exceed:

0.004 lb/hr; and

0.016 ton/yr

The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A)(1).

See section A.2.a below.

The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

Visible emissions from any stack shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.

The emission limitation specified by this rule is less stringent than the emission limitation established

pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2a. At least 99% of the emissions from this emissions unit shall be captured and vented to a packed tower scrubber.

B. Operational Restrictions

1. The pH of the scrubber liquor shall be maintained within the range of 6.0 to 10.5.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor and record the pH of the scrubber liquor while the emissions unit is in operation. The pH monitor and recorder shall be installed, calibrated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

- a. the pH of the scrubber liquor, on a per shift basis; and,
b. a log or record of operating time for the capture (collection) system, control device, monitoring equipment and the associated emissions unit.

D. Reporting Requirements

1. The permittee shall submit pH deviation (excursion) reports that identify all periods of time during which the scrubber liquor pH did not comply with the pH requirements specified above.

E. Testing Requirements

1. Compliance with the emission limitation(s) in sections A.1. and A.2. of these terms and conditions shall be determined in accordance with the following method(s):

- a. Emission Limitation:
 Visible emissions from any stack shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.
- Applicable Compliance Method:
 Compliance shall be determined through visible emissions observation performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures in OAC rule 3745-17-03(B)(1).
- b. Emission Limitation:
 Particulate and PM10 emissions shall not exceed:
 0.01 lb/hr; and
 0.04 ton/yr
- Applicable Compliance Method:
 Fugitive Emissions
 Multiply the emission factor of 0.35 lb/ton (Ohio EPA RACM Page 2-219) times the PWR of 0.6 ton/hr times 0.01 (99% capture efficiency), which equals 0.002 lb PM/PM₁₀/hr
 Stack Emissions
 Multiply the emission factor of 0.35 lb/ton (Ohio EPA RACM Page 2-219) times the PWR of 0.6 ton/hr times 0.99 (99% capture efficiency) times 0.01 (99% control efficiency), which equals 0.002 lb PM/PM₁₀/hr.
 Total
 $0.002 \text{ lb PM/PM}_{10}/\text{hr} + 0.002 \text{ lb PM/PM}_{10}/\text{hr} = 0.004 \text{ lb PM/PM}_{10}/\text{hr}$
- c. Emission Limitation:
 SO₂ emissions shall not exceed:
 0.25 lb/hr; and
 1.1 tons/yr
- Applicable Compliance Method:
 Fugitive Emissions
 Multiply the emission factor of 20.03 lbs SO₂/ton sand (from Walnut Street Stack tests conducted on 7/24/98) times the PWR of 0.6 ton/hr times 0.01 (99% capture eff.), which equals 0.12 lb SO₂/hr.
 Stack Emissions
 Multiply the emission factor of 20.03 lbs SO₂/ton sand (from Walnut Street Stack tests conducted on 7/24/98) times the PWR of 0.6 ton/hr times 0.99 (99% capture eff.) times 0.01 (99% control efficiency), which equals 0.12 lb SO₂/hr.

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Raven

PTI A

Issued: 3/22/00

Emissions Unit ID: **P027**

Total

$$0.12 \text{ lb SO}_2/\text{hr} + 0.12 \text{ lb SO}_2/\text{hr} = 0.24 \text{ lb SO}_2/\text{hr}$$

Raven
PTI A
Issued: 3/22/00

Emissions Unit ID: **P027**

- d. Emission Limitation
VOC emissions shall not exceed:
0.004 lb/hr; and
0.016 ton/yr

Applicable Compliance Method:

Multiply the emission factor of 0.0062 lb VOC/ton sand (Ashland Chemical test data 8/20/97 + 20% safety factor) times the PWR of 0.6 ton/hr equals 0.0037 lb VOC/hr.

F. Miscellaneous Requirements

- 1. This permit to install replaces PTI 15-427 issued August 31, 1988.

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. 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>	
Sand Core Machine #8 with packed tower scrubber (Modification by switching to an acrylic-epoxy SO₂ coldbox binder system)	OAC rule 3745-31-05(A)(3)	OAC rule 3745-17-11
	OAC rule 3745-18-06(E)	
	OAC rule 3745-17-07(A)(1)	

Raven
PTI A
Issued: 3/22/00

Emissions Unit ID: **P028**

Applicable Emissions
Limitations/Control Measures

Particulate and PM10 emissions shall not exceed:

0.01 lb/hr; and
0.04 ton/yr

Sulfur Dioxide emissions shall not exceed:

0.2 lb/hr; and
0.88 ton/yr

Volatile Organic Compound emissions shall not exceed:

0.003 lb/hr; and
0.013 ton/yr

The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A)(1).

See section A.2.a below.

Exempt because the PWR is less than 1,000 lbs/hr.

Visible emissions from any stack shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.

The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2a. At least 99% of the emissions from this emissions unit shall be captured and vented to a packed tower scrubber.

B. Operational Restrictions

1. The pH of the scrubber liquor shall be maintained within the range of 6.0 to 10.5.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor and record the pH of the scrubber liquor while the emissions unit is in operation. The pH monitor and recorder shall be installed, calibrated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

- a. the pH of the scrubber liquor, on a per shift basis; and,
- b. a log or record of operating time for the capture (collection) system, control device, monitoring equipment and the associated emissions unit.

D. Reporting Requirements

1. The permittee shall submit pH deviation (excursion) reports that identify all periods of time during which the scrubber liquor pH did not comply with the pH requirements specified above.

E. Testing Requirements

1. Compliance with the emission limitation(s) in sections A.1. and A.2. of these terms and conditions shall be determined in accordance with the following method(s):
 - a. Emission Limitation:
Visible emissions from any stack shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.

Applicable Compliance Method:

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

- b. Emission Limitation:
Particulate and PM₁₀ emissions shall not exceed:
0.01 lb/hr; and
0.04 ton/yr

Applicable Compliance Method:

Fugitive Emissions

Multiply the emission factor of 0.35 lb/ton (Ohio EPA RACM Page 2-219) times the PWR of 0.4 ton/hr times 0.01 (99% capture efficiency), which equals 0.00214 lb PM/PM₁₀/hr

Stack Emissions

Multiply the emission factor of 0.35 lb/ton (Ohio EPA RACM Page 2-219) times the PWR of 0.4 ton/hr times 0.99 (99% capture efficiency) times 0.01 (99% control efficiency), which equals 0.0014 lb PM/PM₁₀/hr.

Total

$$0.0014 \text{ lb PM/PM}_{10}/\text{hr} + 0.0014 \text{ lb PM/PM}_{10}/\text{hr} = 0.0028 \text{ lb PM/PM}_{10}/\text{hr}$$

- c. Emission Limitation:
Sulfur Dioxide emissions shall not exceed:
0.2 lb/hr; and
0.88 ton/yr

Applicable Compliance Method:

Fugitive Emissions

Multiply the emission factor of 20.03 lbs SO₂/ton sand (from Walnut Street Stack tests conducted on 7/24/98) times the PWR of 0.4 ton/hr times 0.01 (99% capture eff.), which equals 0.08 lb SO₂/hr.

Stack Emissions

Multiply the emission factor of 20.03 lbs SO₂/ton sand (from Walnut Street Stack tests conducted on 7/24/98) times the PWR of 0.4 ton/hr times 0.99 (99% capture eff.) times 0.01 (99% control efficiency), which equals 0.08 lb SO₂/hr.

Total

$$0.08 \text{ lb SO}_2/\text{hr} + 0.08 \text{ lb SO}_2/\text{hr} = 0.16 \text{ lb SO}_2/\text{hr}$$

- d. Emission Limitation
VOC emissions shall not exceed:
0.003 lb/hr; and
0.013 ton/yr

Applicable Compliance Method:

Multiply the emission factor of 0.0062 lb VOC/ton sand (Ashland Chemical test data 8/20/97 + 20% safety factor) times the PWR of 0.4 ton/hr, which equals 0.0025 lb VOC/hr.

F. Miscellaneous Requirements

- 1. This permit to install replaces PTI 15-427 issued August 31, 1988.

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. 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>	
Sand Core Machine #9 with packed tower scrubber (Modification by switching to an acrylic-epoxy SO₂ coldbox binder system)	OAC rule 3745-31-05(A)(3)	OAC rule 3745-17-07(A)(1)
		OAC rule 3745-17-11
	OAC rule 3745-18-06(E)	

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

Applicable Emissions
Limitations/Control Measures

Particulate and PM₁₀ emissions shall not exceed:

0.01 lb/hr; and

0.04 ton/yr

Sulfur Dioxide emissions shall not exceed:

0.25 lb/hr; and

1.1 tons/yr

Volatile Organic Compound emissions shall not exceed:

0.004 lb/hr; and

0.016 ton/yr

The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A)(1).

See section A.2.a below.

The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

Visible emissions from any stack shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.

The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule

2. Additional Terms and Conditions

- 2a. At least 99% of the emissions from this emissions unit shall be captured and vented to a packed tower scrubber.

B. Operational Restrictions

1. The pH of the scrubber liquor shall be maintained within the range of 6.0 to 10.5.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor and record the pH of the scrubber liquor while the emissions unit is in operation. The pH monitor and recorder shall be installed, calibrated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

- a. the pH of the scrubber liquor, on a per shift basis; and,
- b. a log or record of operating time for the capture (collection) system, control device, monitoring equipment and the associated emissions unit.

D. Reporting Requirements

1. The permittee shall submit pH deviation (excursion) reports that identify all periods of time during which the scrubber liquor pH did not comply with the pH requirements specified above.

E. Testing Requirements

1. Compliance with the emission limitation(s) in sections A.1. and A.2. of these terms and conditions shall be determined in accordance with the following method(s):

- a. Emission Limitation:
 Visible emissions from any stack shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.

Applicable Compliance Method:

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

- b. Emission Limitation:
 Particulate and PM₁₀ emissions shall not exceed:
 0.01 lb/hr; and
 0.04 ton/yr

Applicable Compliance Method:

Fugitive Emissions

Multiply the emission factor of 0.35 lb/ton (Ohio EPA RACM Page 2-219) times the PWR of 0.6 ton/hr times 0.01 (99% capture efficiency), which equals 0.002 lb PM/PM₁₀/hr

Stack Emissions

Multiply the emission factor of 0.35 lb/ton (Ohio EPA RACM Page 2-219) times the PWR of 0.6 ton/hr times 0.99 (99% capture efficiency) times 0.01 (99% control efficiency), which equals 0.002 lb PM/PM₁₀/hr.

Total

0.002 lb PM/PM₁₀/hr + 0.002 lb PM/PM₁₀/hr = 0.004 lb PM/PM₁₀/hr

- c. Emission Limitation:
 SO₂ emissions shall not exceed:
 0.25 lb/hr; and
 1.1 tons/yr

Applicable Compliance Method:

Fugitive Emissions

Multiply the emission factor of 20.03 lbs SO₂/ton sand (from Walnut Street Stack tests conducted on 7/24/98) times the PWR of 0.6 ton/hr times 0.01 (99% capture eff.), which equals 0.12 lb SO₂/hr.

Stack Emissions

Multiply the emission factor of 20.03 lbs SO₂/ton sand (from Walnut Street Stack tests conducted on 7/24/98) times the PWR of 0.6 ton/hr times 0.99 (99% capture eff.) times

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Raven

PTI A

Issued: 3/22/00

Emissions Unit ID: **P031**

0.01 (99% control efficiency), which equals 0.12 lb SO₂/hr.

Total

0.12 lb SO₂/hr + 0.12 lb SO₂/hr = 0.24 lb SO₂/hr

Ravenna Aluminum Inc - Canton Division

PTI Application: 15-01302

Issued

Facility ID: 1576000335

Emissions Unit ID: P031

- d. Emission Limitation
VOC emissions shall not exceed:
0.004 lb/hr; and
0.016 ton/yr

Applicable Compliance Method:

Multiply the emission factor of 0.0062 lb VOC/ton sand (Ashland Chemical test data 8/20/97 + 20% safety factor) times the PWR of 0.6 ton/hr, which equals 0.0037 lb VOC/hr.

F. Miscellaneous Requirements

1. This permit to install replaces PTI 15-427 issued August 31, 1988.

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. 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>	
Sand Core Machine #13 with packed tower scrubber (Modification by switching to an acrylic-epoxy SO₂ coldbox binder system)	OAC rule 3745-31-05(A)(3)	OAC rule 3745-17-11
	AC rule 3745-18-06(E)	
	OAC rule 3745-17-07(A)(1)	

Applicable Emissions
Limitations/Control Measures

Particulate and PM₁₀ emissions shall not exceed:

0.01 lb/hr; and
0.04 ton/yr

Sulfur Dioxide emissions shall not exceed:

0.1 lb/hr; and
0.44 ton/yr

Volatile Organic Compound emissions shall not exceed:

0.001 lb/hr; and
0.003 ton/yr

The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A)(1).

See section A.2.a below.

Exempt because the PWR is less than 1,000 lbs/hr.

Visible emissions from any stack shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.

The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2a. At least 99% of the emissions from this emissions unit shall be captured and vented to a packed tower scrubber.

B. Operational Restrictions

1. The pH of the scrubber liquor shall be maintained within the range of 6.0 to 10.5.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor and record the pH of the scrubber liquor while the emissions unit is in operation. The pH monitor and recorder shall be installed, calibrated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

- a. the pH of the scrubber liquor, on a per shift basis; and,
b. a log or record of operating time for the capture (collection) system, control device, monitoring equipment and the associated emissions unit.

D. Reporting Requirements

1. The permittee shall submit pH deviation (excursion) reports that identify all periods of time during which the scrubber liquor pH did not comply with the pH requirements specified above.

E. Testing Requirements

1. Compliance with the emission limitation(s) in sections A.1. and A.2. of these terms and conditions shall be determined in accordance with the following method(s):
- a. Emission Limitation:
Visible emissions from any stack shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.

Applicable Compliance Method:

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

- b. Emission Limitation:
Particulate and PM₁₀ emissions shall not exceed:
0.01 lb/hr; and
0.04 ton/yr

Applicable Compliance Method:

Fugitive Emissions

Multiply the emission factor of 0.35 lb/ton (Ohio EPA RACM Page 2-219) times the PWR of 0.11 ton/hr times 0.01 (99% capture efficiency), which equals 0.0004 lb PM/PM₁₀/hr

Stack Emissions

Multiply the emission factor of 0.35 lb/ton (Ohio EPA RACM Page 2-219) times the PWR of 0.11 ton/hr times 0.99 (99% capture efficiency) times 0.01 (99% control efficiency), which equals 0.0004 lb PM/PM₁₀/hr.

Total

$$0.0004 \text{ lb PM/PM}_{10}/\text{hr} + 0.0004 \text{ lb PM/PM}_{10}/\text{hr} = 0.0008 \text{ lb PM/PM}_{10}/\text{hr}$$

- c. Emission Limitation:
SO₂ emissions shall not exceed:
0.1 lb/hr; and
0.44 ton/yr

Applicable Compliance Method:

Fugitive Emissions

Multiply the emission factor of 20.03 lbs SO₂/ton sand (from Walnut Street Stack tests conducted on 7/24/98) times the PWR of 0.11 ton/hr times 0.01 (99% capture eff.), which equals 0.02 lb SO₂/hr.

Stack Emissions

Multiply the emission factor of 20.03 lbs SO₂/ton sand (from Walnut Street Stack tests conducted on 7/24/98) times the PWR of 0.11 ton/hr times 0.99 (99% capture eff.) times 0.01 (99% control efficiency), which equals 0.02 lb SO₂/hr.

Total

$$0.02 \text{ lb SO}_2/\text{hr} + 0.02 \text{ lb SO}_2/\text{hr} = 0.04 \text{ lb SO}_2/\text{hr}$$

Ravenna Aluminum Inc - Canton Division

PTI Application: 15-01302

Issued

Facility ID: 1576000335

Emissions Unit ID: P035

- d. Emission Limitation
VOC emissions shall not exceed:
0.001 lb/hr; and
0.003 ton/yr

Applicable Compliance Method:

Multiply the emission factor of 0.0062 lb VOC/ton sand (Ashland Chemical test data 8/20/97 + 20% safety factor) times the PWR of 0.11 ton/hr, which equals 0.0007 lb VOC/hr.

F. Miscellaneous Requirements

1. This permit to install replaces PTI 15-684 originally issued on September 5, 1991 and modified on February 9, 1995.

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

- 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>	
Sand Core Machine #12 with packed tower scrubber (Modification by switching to an acrylic-epoxy SO₂ coldbox binder system)	OAC rule 3745-31-05(A)(3)	OAC rule 3745-17-11
	OAC rule 3745-18-06(E)	
	OAC rule 3745-17-07(A)(1)	

Raven**PTI A****Issued: 3/22/00**Emissions Unit ID: **P036**

Applicable Emissions
Limitations/Control Measures

Particulate and PM₁₀ emissions shall not exceed:

0.01 lb/hr; and

0.04 ton/yr

Sulfur Dioxide emissions shall not exceed:

0.2 lb/hr; and

0.88 ton/yr

Volatile Organic Compound emissions shall not exceed:

0.003 lb/hr; and

0.013 ton/yr

The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A)(1).

See section A.2.a below.

Exempt because PWR is less than 1,000 lbs/hr.

Visible emissions from any stack shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.

The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2a. At least 99% of the emissions from this emissions unit shall be captured and vented to a packed tower scrubber.

B. Operational Restrictions

1. The pH of the scrubber liquor shall be maintained within the range of 6.0 to 10.5.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor and record the pH of the scrubber liquor while the emissions unit is in operation. The pH monitor and recorder shall be installed, calibrated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

- a. the pH of the scrubber liquor, on a per shift basis; and,
b. a log or record of operating time for the capture (collection) system, control device, monitoring equipment and the associated emissions unit.

D. Reporting Requirements

1. The permittee shall submit pH deviation (excursion) reports that identify all periods of time during which the scrubber liquor pH did not comply with the pH requirements specified above.

E. Testing Requirements

1. Compliance with the emission limitation(s) in sections A.1. and A.2. of these terms and conditions shall be determined in accordance with the following method(s):
- a. Emission Limitation:
Visible emissions from any stack shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.

Applicable Compliance Method:

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

- b. Emission Limitation:
 Particulate and PM₁₀ emissions shall not exceed:
 0.01 lb/hr; and
 0.04 ton/yr

Applicable Compliance Method:

Fugitive Emissions

Multiply the emission factor of 0.35 lb/ton (Ohio EPA RACM Page 2-219) times the PWR of 0.4 ton/hr times 0.01 (99% capture efficiency), which equals 0.0014 lb PM/PM₁₀/hr

Stack Emissions

Multiply the emission factor of 0.35 lb/ton (Ohio EPA RACM Page 2-219) times the PWR of 0.4 ton/hr times 0.99 (99% capture efficiency) times 0.01 (99% control efficiency), which equals 0.0014 lb PM/PM₁₀/hr.

Total

$$0.0014 \text{ lb PM/PM}_{10}/\text{hr} + 0.0014 \text{ lb PM/PM}_{10}/\text{hr} = 0.0028 \text{ lb PM/PM}_{10}/\text{hr}$$

- c. Emission Limitation:
 Sulfur Dioxide emissions shall not exceed:
 0.2 lb/hr; and
 0.88 ton/yr

Applicable Compliance Method:

Fugitive Emissions

Multiply the emission factor of 20.03 lbs SO₂/ton and (from Walnut Street Stack tests conducted on 7/24/98) times the PWR of 0.4 ton/hr times 0.01 (99% capture eff.), which equals 0.08 lb SO₂/hr.

Stack Emissions

Multiply the emission factor of 20.03 lbs SO₂/ton sand (from Walnut Street Stack tests conducted on 7/24/98) times the PWR of 0.4 ton/hr times 0.99 (99% capture eff.) times 0.01 (99% control efficiency), which equals 0.08 lb SO₂/hr.

Total

$$0.08 \text{ lb SO}_2/\text{hr} + 0.08 \text{ lb SO}_2/\text{hr} = 0.16 \text{ lb SO}_2/\text{hr}$$

- d. Emission Limitation

VOC emissions shall not exceed:
0.003 lb/hr; and
0.013 ton/yr

Applicable Compliance Method:
Multiply the emission factor of 0.0062 lb VOC/ton sand (Ashland Chemical test data 8/20/97 + 20% safety factor) times the PWR of 0.4 ton/hr, which equals 0.0025 lb VOC/hr.

F. Miscellaneous Requirements

1. This permit to install replaces PTI 15-684 originally issued on September 5, 1991 and modified on February 9, 1995.

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

- 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>	
Sand Core Machine #6 with packed tower scrubber (Modification by switching to an acrylic-epoxy SO₂ coldbox binder system)	OAC rule 3745-31-05(A)(3)	OAC rule 3745-17-11
	OAC rule 3745-18-06(E)	
	OAC rule 3745-17-07(A)(1)	

Raven**PTI A****Issued: 3/22/00**Emissions Unit ID: **P037**

Applicable Emissions
Limitations/Control Measures

Particulate and PM₁₀ emissions shall not exceed:

0.01 lb/hr; and

0.04 ton/yr

Sulfur Dioxide emissions shall not exceed:

0.02 lb/hr; and

0.1 ton/yr

Volatile Organic Compound emissions shall not exceed:

0.001 lb/hr; and

0.003 ton/yr

The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A)(1).

See section A.2.a below.

Exempt because the PWR is less than 1,000 lbs/hr.

Visible emissions from any stack shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.

The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2a. At least 99% of the emissions from this emissions unit shall be captured and vented to a packed tower scrubber.

B. Operational Restrictions

1. The pH of the scrubber liquor shall be maintained within the range of 6.0 to 10.5.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor and record the pH of the scrubber liquor while the emissions unit is in operation. The pH monitor and recorder shall be installed, calibrated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

- a. the pH of the scrubber liquor, on a per shift basis; and,
b. a log or record of operating time for the capture (collection) system, control device, monitoring equipment and the associated emissions unit.

D. Reporting Requirements

1. The permittee shall submit pH deviation (excursion) reports that identify all periods of time during which the scrubber liquor pH did not comply with the pH requirements specified above.

E. Testing Requirements

1. Compliance with the emission limitation(s) in sections A.1. and A.2. of these terms and conditions shall be determined in accordance with the following method(s):
- a. Emission Limitation:
Visible emissions from any stack shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.

Applicable Compliance Method:

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

- b. Emission Limitation:
Particulate and PM₁₀ emissions shall not exceed:
0.01 lb/hr; and
0.04 ton/yr

Applicable Compliance Method:

Fugitive Emissions

Multiply the emission factor of 0.35 lb/ton (Ohio EPA RACM Page 2-219) times the PWR of 0.04 ton/hr times 0.01 (99% capture efficiency), which equals 0.00014 lb PM/PM₁₀/hr

Stack Emissions

Multiply the emission factor of 0.35 lb/ton (Ohio EPA RACM Page 2-219) times the PWR of 0.04 ton/hr times 0.99 (99% capture efficiency) times 0.01 (99% control efficiency), which equals 0.00014 lb PM/PM₁₀/hr.

Total

$0.00014 \text{ lb PM/PM}_{10}/\text{hr} + 0.00014 \text{ lb PM/PM}_{10}/\text{hr} = 0.00028 \text{ lb PM/PM}_{10}/\text{hr}$

- c. Emission Limitation:
SO₂ emissions shall not exceed:
0.02 lb/hr; and
0.1 ton/yr

Applicable Compliance Method:

Fugitive Emissions

Multiply the emission factor of 20.03 lbs SO₂/ton sand (from Walnut Street Stack tests conducted on 7/24/98) times the PWR of 0.04 ton/hr times 0.01 (99% capture eff.), which equals 0.008 lb SO₂/hr.

Stack Emissions

Multiply the emission factor of 20.03 lbs SO₂/ton sand (from Walnut Street Stack tests conducted on 7/24/98) times the PWR of 0.6 ton/hr times 0.99 (99% capture eff.) times 0.01 (99% control efficiency), which equals 0.008 lb SO₂/hr.

Total

$0.008 \text{ lb SO}_2/\text{hr} + 0.008 \text{ lb SO}_2/\text{hr} = 0.016 \text{ lb SO}_2/\text{hr}$

- d. Emission Limitation

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PTI A

Issued: 3/22/00

Emissions Unit ID: **P037**

VOC emissions shall not exceed:
0.001 lb/hr; and
0.003 ton/yr

Applicable Compliance Method:

Multiply the emission factor of 0.0062 lb VOC/ton sand (Ashland Chemical test data 8/20/97 + 20% safety factor) times the PWR of 0.04 ton/hr, which equals 0.0003 lb VOC/hr.

F. Miscellaneous Requirements

1. This permit to install replaces PTI 15-697 issued on August 28, 1991.

PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. 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>	
Sand Core Machine #7 with packed tower scrubber (Modification by switching to an acrylic-epoxy SO₂ coldbox binder system)	OAC rule 3745-31-05(A)(3)	OAC rule 3745-17-11
	OAC rule 3745-18-06(E)	
	OAC rule 3745-17-07(A)(1)	

Raven**PTI A****Issued: 3/22/00**Emissions Unit ID: **P038**

Applicable Emissions
Limitations/Control Measures

Particulate and PM₁₀ emissions shall not exceed:

0.01 lb/hr; and

0.04 ton/yr

Sulfur Dioxide emissions shall not exceed:

0.02 lb/hr; and

0.1 ton/yr

Volatile Organic Compound emissions shall not exceed:

0.001 lb/hr; and

0.003 ton/yr

The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A)(1).

See section A.2.a below.

Exempt because the PWR is less than 1,000 lbs/hr.

Visible emissions from any stack shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.

The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

- 2a. At least 99% of the emissions from this emissions unit shall be captured and vented to a packed tower scrubber.

B. Operational Restrictions

1. The pH of the scrubber liquor shall be maintained within the range of 6.0 to 10.5.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate and maintain equipment to continuously monitor and record the pH of the scrubber liquor while the emissions unit is in operation. The pH monitor and recorder shall be installed, calibrated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

- a. the pH of the scrubber liquor, on a per shift basis; and,
- b. a log or record of operating time for the capture (collection) system, control device, monitoring equipment and the associated emissions unit.

D. Reporting Requirements

1. The permittee shall submit pH deviation (excursion) reports that identify all periods of time during which the scrubber liquor pH did not comply with the pH requirements specified above.

E. Testing Requirements

1. Compliance with the emission limitation(s) in sections A.1. and A.2. of these terms and conditions shall be determined in accordance with the following method(s):
 - a. Emission Limitation:
Visible emissions from any stack shall not exceed 20% opacity, as a six-minute average, except as provided by the rule.

Applicable Compliance Method:

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

- b. Emission Limitation:
Particulate and PM₁₀ emissions shall not exceed:
0.01 lb/hr; and
0.04 ton/yr

Applicable Compliance Method:

Fugitive Emissions

Multiply the emission factor of 0.35 lb/ton (Ohio EPA RACM Page 2-219) times the PWR of 0.04 ton/hr times 0.01 (99% capture efficiency), which equals 0.00014 lb PM/PM₁₀/hr

Stack Emissions

Multiply the emission factor of 0.35 lb/ton (Ohio EPA RACM Page 2-219) times the PWR of 0.04 ton/hr times 0.99 (99% capture efficiency) times 0.01 (99% control efficiency), which equals 0.00014 lb PM/PM₁₀/hr.

Total

$$0.00014 \text{ lb PM/PM}_{10}/\text{hr} + 0.00014 \text{ lb PM/PM}_{10}/\text{hr} = 0.00028 \text{ lb PM/PM}_{10}/\text{hr}$$

- c. Emission Limitation:
SO₂ emissions shall not exceed:
0.02 lb/hr; and
0.1 ton/yr

Applicable Compliance Method:

Fugitive Emissions

Multiply the emission factor of 20.03 lbs SO₂/ton sand (from Walnut Street Stack tests conducted on 7/24/98) times the PWR of 0.04 ton/hr times 0.01 (99% capture eff.), which equals 0.008 lb SO₂/hr.

Stack Emissions

Multiply the emission factor of 20.03 lbs SO₂/ton sand (from Walnut Street Stack tests conducted on 7/24/98) times the PWR of 0.6 ton/hr times 0.99 (99% capture eff.) times 0.01 (99% control efficiency), which equals 0.008 lb SO₂/hr.

Total

$$0.008 \text{ lb SO}_2/\text{hr} + 0.008 \text{ lb SO}_2/\text{hr} = 0.016 \text{ lb SO}_2/\text{hr}$$

- d. Emission Limitation
VOC emissions shall not exceed:
0.001 lb/hr; and
0.003 ton/yr

Applicable Compliance Method:

Multiply the emission factor of 0.0062 lb VOC/ton sand (Ashland Chemical test data 8/20/97 + 20% safety factor) times the PWR of 0.04 ton/hr, which equals 0.0003 lb VOC/hr.

F. Miscellaneous Requirements

- 1. This permit to install replaces PTI 15-697 issued on August 28, 1991.