



Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

TO: Interested Parties / Applicant
DATE: August 3, 2007
RE: Praxair Distribution, Inc. / 089-24943-00525
FROM: Nisha Sizemore
Chief, Permits Branch
Office of Air Quality

Notice of Decision: Approval - Registration

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 4-21.5-3-4(d) this order is effective when it is served. When served by U.S. mail, the order is effective three (3) calendar days from the mailing of this notice pursuant to IC 4-21.5-3-2(e).

If you wish to challenge this decision, IC 4-21.5-3-7 requires that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room 1049, Indianapolis, IN 46204, **within eighteen (18) calendar days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

- (1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
- (2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
- (3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

- (1) the name and address of the person making the request;
- (2) the interest of the person making the request;
- (3) identification of any persons represented by the person making the request;
- (4) the reasons, with particularity, for the request;
- (5) the issues, with particularity, proposed for considerations at any hearing; and
- (6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures
FN-REGIS.dot 03/23/06



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live.

Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

Dave DeWitt
Praxair Distribution, Inc.
166 State Road 130
Hobart, IN 46342

August 3, 2007

Re: Registered Operation Status,
089-24943-00525

Dear Mr. DeWitt:

The application and additional information from Praxair Distribution, Inc. received on June 19, 2007 and July 5, 2007 have been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.5, it has been determined that the following stationary liquid and gas cylinder filling plant located at 166 State Road, Hobart, Indiana, is classified as registered:

- (a) One (1) surface coating operation using manual hand roller application for the coating of cylinders, with a maximum capacity of 4 cylinders per hour, using no controls, and exhausting to general ventilation in the building.
- (b) One (1) surface coating operation using manual aerosol can application for the coating of cylinder lids, with a maximum capacity of 4 cylinder lids per hour, using no controls, and exhausting to general ventilation in the building.
- (c) One (1) abrasive blaster using glass bead shot, identified as sand blaster, with a maximum capacity of 1 pound of miscellaneous small metal parts from regulators and torches per hour, using a filter as control with a maximum control efficiency of 60%, and exhausting to general ventilation in the building.
- (d) One (1) natural gas-fired boiler, identified as 2313455, installed in January 27, 1993, with a maximum heat input capacity of 1.43 MMBtu/hr.

The following conditions shall be applicable:

- (a) Pursuant to 326 IAC 6-2-4, the particulate emissions from the natural gas-fired boiler, identified as 2313455, which has the maximum capacity less than 1.43 mmBtu/hr, shall not exceed 0.6 pounds per mmBtu.
- (b) Pursuant to 326 IAC 6-3-2(e)(2) (Particulate Emission Limitations for Manufacturing Processes), particulate emissions from the abrasive blaster when operating at a maximum process weight rate less than 100 pounds per hour, shall not exceed 0.551 pounds per hour.
- (c) Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following:
 - (1) Opacity shall not exceed an average of twenty percent (20%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

- (2) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.
- (d) Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions), the Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions).

This registration is the first air approval issued to this source. The source may operate according to 326 IAC 2-5.5.

An authorized individual shall provide an annual notice to the Office of Air Quality that the source is in operation and in compliance with this registration pursuant to 326 IAC 2-5.5-4(a)(3). The annual notice shall be submitted to:

Compliance Data Section
Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, IN 46204-2251

no later than March 1 of each year, with the annual notice being submitted in the format attached.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source. If you have any questions on this matter, please contact Renee Traivaranon, OAQ, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251, at 317-233-8397 or at 1-800-451-6027 (ext 3-8397).

Sincerely/Original Signed By:

Nisha Sizemore, Chief
Permits Branch
Office of Air Quality

RT

Enclosure - Notice of Decision

cc: File - Lake County
Lake County Health Department
Air Compliance Section - Rick Massoels
IDEM Northwest Regional Office
Permits Administrative and Development
Billing, Licensing and Training Section – Dan Stamatkin

Registration Annual Notification

This form should be used to comply with the notification requirements under 326 IAC 2-5.5-4(a)(3)

Company Name:	Praxair Distribution, Inc.
Address:	166 State Road, Hobart, IN 46342
Phone #:	(219) 942-2195
Registration #:	089-24943-00525

Certification by the Authorized Individual
I hereby certify that Praxair Distribution, Inc. is still in operation and is in compliance with the requirements of Registration 089-24943-00525 .
Name (typed):
Title:
Signature:
Phone Number:
Date:

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a Registration

Source Background and Description

Source Name: Praxair Distribution, Inc.
Source Location: 166 State Road, Hobart, IN 46342
County: Lake
SIC Code: 2813
Application No.: 089-24943-00525
Reviewer: Renee Traivaranon

On June 19, 2007 and July 5, 2007, the Office of Air Quality (OAQ) received an application and additional information from Praxair Distribution, Inc. relating to the operation of liquid and gas filling plant.

Unregistered Emission Units and Pollution Control Equipment

The application includes information relating to the operation of the following equipment:

- (a) One (1) surface coating operation using manual hand roller application for the coating of cylinders, with a maximum capacity of 4 cylinders per hour, using no controls, and exhausting to general ventilation in the building.
- (b) One (1) surface coating operation using manual aerosol can application for the coating of cylinder lids, with a maximum capacity of 4 cylinder lids per hour, using no controls, and exhausting to general ventilation in the building.
- (c) One (1) abrasive blaster using glass bead shot, identified as sand blaster, with a maximum capacity of 1 pound of miscellaneous small metal parts from regulators and torches per hour, using a filter as control with a maximum control efficiency of 60%, and exhausting to general ventilation in the building.
- (d) One (1) natural gas-fired boiler, identified as 2313455, installed in January 27, 1993, with a maximum heat input capacity of 1.43 MMBtu/hr.

New Emission Units and Pollution Control Equipment

There are no new facilities operating at this source during this review process.

Existing Approvals

This is the first air approval issued to this source.

Enforcement Issues

IDEM is aware that equipment has been operated prior to receipt of the proper approval. IDEM is reviewing this matter and will take the appropriate action.

Recommendation

The staff recommends to the Commissioner that the application be approved as a registration. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on June 19, 2007 and additional information was received on July 5, 2007.

Emission Calculations

See Appendix A of this TSD for emissions calculations (Appendix A, pages 1 through 4).

Potential To Emit Before Controls

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit (PTE) is defined as “the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U.S. EPA, the department, or the appropriate local air pollution control agency.”

Pollutant	Potential To Emit (tons/year)
PM	14.6
PM-10	14.6
SO ₂	negligible
NO _x	0.6
VOC	4.3
CO	0.5
Worst Single HAP	negligible
Combined HAPs	negligible

- (a) The PTE (as defined in 326 IAC 2-1.1-1(16)) of regulated criteria pollutants are less than twenty-five (25) tons per year, but the PTE of particulate matter (PM or PM-10) is greater than five (5) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-5.5. A registration will be issued.
- (b) The PTE (as defined in 326 IAC 2-1.1-1(16)) of any single HAP is less than ten (10) tons per year and the PTE of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.

County Attainment Status

The source is located in Lake County.

Pollutant	Status
PM2.5	Nonattainment
PM10	Attainment
SO ₂	Attainment
NO ₂	Attainment
8-Hour Ozone	Nonattainment
CO	Attainment
Lead	Attainment

Note: On October 25, 2006, the Indiana Air Pollution Control Board finalized a rule revision to 326 IAC 1-4-1 revoking the one-hour ozone standard in Indiana.

- (a) U.S.EPA in Federal Register Notice 70 FR 943 dated January 5, 2005 has designated Lake County as nonattainment for PM2.5. On March 7, 2005 the Indiana Attorney General's Office on behalf of IDEM filed a law suit with the Court of Appeals for the District of Columbia Circuit challenging U.S. EPA's designation of nonattainment areas without sufficient data. However, in order to ensure that sources are not potentially liable for violation of the Clean Air Act, the OAQ is following the U.S. EPA's guidance to regulate PM10 emissions as surrogate for PM2.5 emissions pursuant to the Nonattainment New Source Review requirements. See the State Rule Applicability – Entire Source section.
- (b) Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to ozone standards. Lake County has been designated as nonattainment for the 8 hour ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Emission Offset 326 IAC 2-3. See the State Rule Applicability – Entire Source section.
- (c) Lake County has been classified as attainment or unclassifiable for other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability – Entire Source section.
- (d) Fugitive Emissions
Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2 or 326 IAC 2-3 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive emissions are not counted toward determination of PSD or Emission Offset applicability.

Source Status

Existing Source PSD and Emission Offset Definition (emissions after controls, based on 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/yr)
PM	14.6
PM-10	14.6
SO ₂	negligible
NO _x	0.6
VOC	4.3
CO	0.5
Worst Single HAP	negligible
Combination HAPs	negligible

This source is not a major stationary source under 326 IAC 2-2 (PSD) because no attainment pollutant is emitted at a rate of 250 tons per year or greater and it is not in one of the 28 listed source categories. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

This source is not a major stationary under 326 IAC 2-3 (Emission Offset) because no nonattainment pollutant is emitted at a rate of 100 tons per year or greater and it is not in one of the 28 listed source categories. Therefore, pursuant to 326 IAC 2-3, the Emission Offset requirements do not apply.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This source is not subject to the Part 70 Permit requirements because the PTE of:

- (a) each criteria pollutant is less than 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
- (c) any combination of HAPs is less than 25 tons/year.

This is the first air approval issued to this source.

Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included for this source.

The natural gas-fired boiler is not subject to the requirements of 40 CFR 60 Subpart Dc—Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. Although this boiler was installed after 1989 but it has a heat input capacity less than 10 million British thermal units per hour (MMBtu/hr).

- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAP)(326 IAC 14, 20 and 40 CFR Part 61, 63) included for this source.

This surface coating operation is not subject to the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR 63, Subpart Mmmm, Miscellaneous Metal Parts and Products Surface Coating, because this source is not a major source of HAPs emissions; the PTE of single HAP and combined HAPs is less than 10 and 25 tons per year respectively.

The natural gas-fired boiler is not subject to the requirements of the NESHAPs for Industrial, Commercial, and Institutional Boilers and Process Heaters, 40 CFR 63, Subpart DDDDD, because this source is not a major source of HAPs emissions; the PTE of single HAP and combined HAPs is less than 10 and 25 tons per year respectively.

State Rule Applicability - Entire Source

326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

This source is not one of the 28 listed source categories defined in 326 IAC 2-2-1(gg)(1), and no attainment pollutant is emitted at a rate of 250 tons per year or greater. Therefore, the requirements of 326 IAC 2-2 (PSD) are not applicable.

326 IAC 2-3 (Emission Offset)

Lake County has been designated as nonattainment for the 8-hour ozone standard. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3. The potential to emit of VOC or nitrogen oxides (NOx) of this source is less than 100 tons per year, therefore, the requirements of 326 IAC 2-3 (Emission Offset) do not apply.

326 IAC 2-1.1-5 (Nonattainment NSR)

Lake County has been classified as nonattainment for PM2.5 in 70 FR 943 dated January 5, 2005. Until U.S. EPA adopts specific New Source Review rules for PM2.5 emissions, it has directed states to regulate PM10 emissions as a surrogate for PM2.5 emissions pursuant to the Nonattainment New Source Review requirements. The potential to emit of PM-10 of source is less than 100 tons per year, therefore, the requirements of 326 IAC 2-1.1-5 are not applicable.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

The requirements of 326 IAC 2-4.1 are not applicable to this source, since the potential to emit of any

single HAP is less than ten (10) tons per year and the potential to emit of a combination of HAPs is less than twenty-five (25) tons per year.

326 IAC 2-6 (Emission Reporting)

This source is located in Lake County and emits volatile organic compounds (VOC) or oxides of nitrogen (NOx) less than twenty-five (25) tons per year. Therefore, the requirements of 326 IAC 2-6 do not apply.

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following:

- (a) Opacity shall not exceed an average of twenty percent (20%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

326 IAC 6.8-1 (Particulate Emission Limitations for Lake County)

The requirements of 326 IAC 6.8-1 (Particulate Emission Limitations for Lake County) do not apply to source because the actual particulate matter is less than ten (10) tons per year.

326 IAC 6.8-10-3 (Fugitive Dust Emissions)

This source is located in the Lake County but the potential to emit of fugitive particulate matter is less than five (5) tons per year. Therefore, the requirements of 326 IAC 6.8-10-3 (formerly 326 IAC 6-1-11.1) (Lake County Fugitive Particulate Matter Control Requirements) do not apply.

326 IAC 6-4 (Fugitive Dust Emissions)

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions).

326 IAC 10-1 (Nitrogen Oxides Control)

The source is not subject to 326 IAC 10 (Nitrogen Oxides Control) because the source is not located in Clark or Floyd Counties.

State Rule Applicability - Surface Coating Operations

326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)

Pursuant to 326 IAC 6-3-1(b)(6), the surface coating operation using roll coating is exempt from the requirements of 326 IAC 6-3.

Pursuant to 326 IAC 6-3-1(b)(14), the surface coating operation using aerosol can is exempt from the requirements of 326 IAC 6-3, because the potential particulate emissions are less than five hundred fifty-one thousandths (0.551) pound per hour.

326 IAC 8-2-9 (Miscellaneous Metal Coating Operations)

The surface coating operation at the source is not subject to the requirements of 326 IAC 8-2-9 because the operation at this source is not covered under the industrial categories listed in the 326 IAC 8-2-9 requirements.

326 IAC 8-1-6 (VOC rules: General Reduction Requirements for New Facilities)

The requirements of 326 IAC 8-1-6 are not applicable, since each of the emission units; rolling coating operation, spray coating operation, at this source does not have the potential to emit greater than twenty-five (25) tons of VOCs per year.

State Rule Applicability - Abrasive Blaster

326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)

Pursuant to 326 IAC 6-3-2(e)(2), particulate emissions, from the abrasive blaster which has a maximum process weight rate less than 100 pounds per hour, shall not exceed 0.551 pounds per hour.

State Rule Applicability – Boiler

326 IAC 7-1 (Sulfur dioxide emission limitations: applicability)

The boiler is not subject to the requirements of 326 IAC 7-1, because the potential and the actual emissions are less than twenty-five (25) tons per year and ten (10) pounds per hour respectively.

326 IAC 6-2 (Particulate Emissions from Indirect Heating Units)

Pursuant to 326 IAC 6-2-4, the particulate emissions from the boiler constructed after September 21, 1983, which has the maximum capacity less than 10 mmBtu/hr, shall not exceed 0.6 pounds per mmBtu.

326 IAC 8-1-6 (VOC rules: General Reduction Requirements for New Facilities)

The requirements of 326 IAC 8-1-6 are not applicable, since the potential to emit VOCs of this boiler is less than twenty-five (25) tons per year.

Conclusion

The operation of this source shall be subject to the conditions of the attached registration, No 089-24943-00525.

**Appendix A: Emissions Calculations
Coating Operation**

**Company Name: Praxair Distribution, Inc.
Address City IN Zip: 166 State Road, Hobart, IN 46342
Approval Number: 089-24943-00525
Reviewer: Renee Traivaranon
Date: July 6, 2007**

Roll Coating

Material	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
W/R Cylinder Enamel Aqua	9.8	21.24%	0.0%	21.2%	0.0%	70.00%	0.10	4.0	2.09	2.09	0.84	20.06	3.66	0	2.99	100%

*Transfer efficiency of 100% based on roller application

Aerosol Can Surface Coating

Material	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
Coating 1660830	6.3	59.0%	0.0%	59.0%	0.0%	35.00%	0.010	4.0	3.69	3.69	0.15	3.54	0.65	0.11	10.54	75%

*Transfer efficiency of 75% based on aerosol can application

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)

Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)

Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)

Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)

Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)

Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)

Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)

Actual Operations: The surface coating operation is used for touch-up or adding color to the cylinders and cylinder lids. For actual operation of the source, approximately 3 cylinders are coated per day using roller application and approximately 3 cylinder lids are coated per week using aerosol cans application.

**Appendix A: Emissions Calculations
Abrasive Brasting**

Company Name: Praxair Distribution, Inc.
Address City IN Zip: 166 State Road, Hobart, IN 46342
Approval Number: 089-24943-00525
Reviewer: Renee Traivaranon
Date: July 6, 2007

Table 1 - Emission Factors for Abrasives*

Abrasive	Emission Factor*	
	lb PM / lb abrasive	lb PM10 / lb PM
Sand	0.041	0.70
Grit	0.010	0.70
Steel Shot	0.004	0.86
Other	0.010	

Emission Factor for Glass Bead Shot, EF =

0.010

 (lb PM/ lb abrasive) (Table 1, Other Abrasives)
Maximum Abrasive Usage Rate, R =

333.3

 lb abrasive /hr
PTE of PM/PM10 Before Controls =

3.33

 lb/hr
PTE of PM/PM10 Before Controls =

14.60

 ton/yr

Filter Control Efficiency =

60%

PTE of PM/PM10 After Controls =

1.33

 lb/hr
PTE of PM/PM10 After Controls =

5.84

 ton/yr

METHODOLOGY

*Emission Factors from STAPPA/ALAPCO "Air Quality Permits", Vol. I, Section 3 "Abrasive Blasting" (1991 edition)

PTE of PM/PM10 Before Controls = [EF (lb PM/ lb abrasive)]*[R (lb abrasive/hr)]

PTE of PM/PM10 After Controls = [PTE of PM/PM10 Before Controls] * [1 - control efficiency]

PTE of PM/PM10 (tons/yr) = [PTE of PM/PM10 (lbs/hr)] * [8760 hours/year] * [1 ton/2000 lbs]

Actual Operations: The blasting is done approximately 3 hours per week, using 1000 pounds of glass bead shot per 3 hour.

**Appendix A: Emissions Calculations
Natural Gas Combustion Only**

**Company Name: Praxair Distribution, Inc.
Address City IN Zip: 166 State Road, Hobart, IN 46342
Approval Number: 089-24943-00525
Reviewer: Renee Traivaranon
Date: July 6, 2007**

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

1.4

12.5

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	1.9	7.6	0.6	100.0	5.5	84.0
				**see below		
Potential Emission in tons/yr	1.2E-02	4.8E-02	3.8E-03	6.3E-01	3.4E-02	5.3E-01

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

See page 2 for HAPs emissions calculations.

**Appendix A: Emissions Calculations
Natural Gas Combustion Only
HAPs Emissions**

**Company Name: Praxair Distribution, Inc.
Address City IN Zip: 166 State Road, Hobart, IN 46342
Approval Number: 089-24943-00525
Reviewer: Renee Traivaranon
Date: July 6, 2007**

HAPs - Organics					
Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	1.315E-05	7.516E-06	4.698E-04	1.127E-02	2.130E-05

HAPs - Metals					
Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	3.132E-06	6.890E-06	8.769E-06	2.380E-06	1.315E-05

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.