

December 14, 2001

David R. Vandre
Precision Heat Treating Corporation
P.O. Box 6162
Fort Wayne, Indiana 46896

Re: Exempt Operation Status
003-13737-00182

Dear Mr. Vandre:

The application from Precision Heat Treating Corporation, received on December 28, 2000, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-1.1-3, it has been determined that the following heat treating operations source, located at 2711 Adams Center Road, Fort Wayne, Indiana, is classified as exempt from air pollution permit requirements:

- (a) Two (2) pneumatic abrasive blasting booths, known as BB1 and BB2, installed in 1995, exhausted through one (1) baghouse, capacity: 4,350 pounds per hour, total.
- (b) Ten (10) natural gas-fired space heaters, rated at 1.3 million British thermal units per hour, total.
- (c) One (1) natural gas-fired office furnace, rated at 0.09 million British thermal units per hour.
- (d) One (1) natural gas-fired parts washer, known as EU#106, installed in 1995, rated at 0.21 million British thermal units per hour and one (1) electric parts washer, known as EU#107 (replaced the former EU#107 which was natural gas-fired), installed in 2001.
- (e) Three (3) natural gas-fired batch carburizers, known as EU#101, EU#103 and EU#104, installed in 1995, rated at 2.0, 1.2 and 1.0 million British thermal units per hour, respectively, capacity: 360 metal parts per hour.
- (f) One (1) natural gas-fired batch carburizer, known as EU#102, installed in 1997, rated at 1.55 million British thermal units per hour, capacity: 360 metal parts per hour.
- (g) Two (2) natural gas-fired batch carburizers, known as EU#420 and EU#421, installed in 2001, rated at 0.52 million British thermal units per hour, each, capacity: 360 metal parts per hour.
- (h) Five (5) natural gas-fired tempering furnace, known as EU#110 - EU#114, installed in 1995, rated at 0.30, million British thermal units per hour, each, capacity: 360 metal parts per hour.
- (i) Two (2) electric tempering furnaces, known as EU#408 and EU#409, installed in 1995, capacity: 360 metal parts per hour, each.
- (j) Two (2) electric tempering furnaces, known as EU#407 and EU#410, installed in 1996, capacity: 360 metal parts per hour, each.

- (k) Two (2) electric tempering furnaces, known as EU#440 and EU#441, installed in 1995, capacity: 360 metal parts per hour, each.
- (l) One (1) natural gas-fired evaporator, known as EU#5, rated at 0.25 million British thermal units per hour.
- (m) Two (2) natural gas-fired endothermic generators, known EU#121, installed in 1995 and EU#122, installed in 2000, rated at 0.52 million British thermal units per hour, each.
- (n) Two (2) natural gas-fired exothermal generators, known as EU#205, installed in 1996 and EU#206, installed in 1995, rated at 0.65 and 0.5 million British thermal units per hour, respectively.
- (o) One (1) electric parts washer, known as EU#430, installed in 2001.
- (p) Two (2) electric continuous belt furnaces, known as EU#201 and EU#203, installed in 1996, capacity: 360 metal parts per hour, each.
- (p) One (1) electric continuous belt furnace, known as EU#202, installed in 1995, capacity: 360 metal parts per hour, each.
- (q) Three(3) electric induction furnaces, known as EU#301, EU#302 and EU#304, installed in 1995, capacity: 70 parts per hour, each.
- (r) One (1) electric induction furnace, known as EU#303, installed in 1997, capacity: 70 parts per hour.
- (s) Two (2) electric hardening furnaces, known as EU#403 and EU#406, installed in 1996, capacity: 50 metal parts per hour.
- (t) One (1) electric hardening furnace, known as EU#404, installed in 1995, capacity: 50 metal parts per hour.
- (v) One (1) electric nitriding furnace, known as EU#402, installed in 1996, capacity: 50 metal parts per hour.
- (w) One (1) electric vacuum furnace, known as EU#401, installed in 1996, capacity: 5.0 metal parts per hour.
- (x) One (1) electric vacuum furnace, known as EU#418, installed in 2001, capacity: 5.0 metal parts per hour.
- (y) One (1) electric salt quench pot, installed in 2001.

The following conditions shall be applicable:

- (1) 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, unless otherwise stated in this permit:
 - (a) Opacity shall not exceed an average of forty percent (40%) 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 Part 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.
- (2) Pursuant to 326 IAC 6-3-2 (Process Operations) the particulate matter (PM) from the two (2) abrasive blasting units, BB1 and BB2, with a combined process weight rate of 4,350 pounds per hour is limited to 6.9 pounds per hour, based on the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Management (OAM) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Sincerely,

Original signed by Paul Dubenetzky

Paul Dubenetzky, Chief
Permits Branch
Office of Air Management

PMC/MES

cc: File -Allen County
Air Compliance -Jennifer Dorn
Permit Tracking - Lisa Lawrence
Air Programs Section - Michele Boner

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for an Exemption

Source Background and Description

Source Name:	Precision Heat Treating Corporation
Source Location:	2711 Adams Center Road, Fort Wayne, Indiana 46896
County:	Allen
SIC Code:	3398, 3599
Operation Permit No.:	E 003-13737-00182
Permit Reviewer:	Paula M. Cagnitore

The Office of Air Quality (OAQ) has reviewed an application from Precision Heat Treating Corporation relating to the construction and operation of a contracted heat treating operations source.

Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units and pollution control devices:

- (a) Two (2) pneumatic abrasive blasting booths, known as BB1 and BB2, installed in 1995, exhausted through one (1) baghouse, capacity: 4,350 pounds per hour, total.
- (b) Ten (10) natural gas-fired space heaters, rated at 1.3 million British thermal units per hour, total.
- (c) One (1) natural gas-fired office furnace, rated at 0.09 million British thermal units per hour.
- (d) One (1) natural gas-fired parts washer, known as EU#106, installed in 1995, rated at 0.21 million British thermal units per hour and one (1) electric parts washer, known as EU#107 (replaced the former EU#107 which was natural gas-fired), installed in 2001.
- (e) Three (3) natural gas-fired batch carburizers, known as EU#101, EU#103 and EU#104, installed in 1995, rated at 2.0, 1.2 and 1.0 million British thermal units per hour, respectively, capacity: 360 metal parts per hour.
- (f) One (1) natural gas-fired batch carburizer, known as EU#102, installed in 1997, rated at 1.55 million British thermal units per hour, capacity: 360 metal parts per hour.
- (g) Two (2) natural gas-fired batch carburizers, known as EU#420 and EU#421, installed in 2001, rated at 0.52 million British thermal units per hour, each, capacity: 360 metal parts per hour.
- (h) Five (5) natural gas-fired tempering furnace, known as EU#110 - EU#114, installed in 1995, rated at 0.30 million British thermal units per hour, each, capacity: 360 metal parts per hour.

- (i) Two (2) electric tempering furnaces, known as EU#408 and EU#409, installed in 1995, capacity: 360 metal parts per hour, each.
- (j) Two (2) electric tempering furnaces, known as EU#407 and EU#410, installed in 1996, capacity: 360 metal parts per hour, each.
- (k) Two (2) electric tempering furnaces, known as EU#440 and EU#441, installed in 1995, capacity: 360 metal parts per hour, each.
- (l) One (1) natural gas-fired evaporator, known as EU#5, rated at 0.25 million British thermal units per hour.
- (m) Two (2) natural gas-fired endothermic generators, known EU#121, installed in 1995 and EU#122, installed in 2000, rated at 0.52 million British thermal units per hour, each.
- (n) Two (2) natural gas-fired exothermal generators, known as EU#205, installed in 1996 and EU#206, installed in 1995, rated at 0.65 and 0.5 million British thermal units per hour, respectively.
- (o) One (1) electric parts washer, known as EU#430, installed in 2001.
- (p) Two (2) electric continuous belt furnaces, known as EU#201 and EU#203, installed in 1996, capacity: 360 metal parts per hour, each.
- (q) One (1) electric continuous belt furnace, known as EU#202, installed in 1995, capacity: 360 metal parts per hour, each.
- (r) Three(3) electric induction furnaces, known as EU#301, EU#302 and EU#304, installed in 1995, capacity: 70 parts per hour, each.
- (s) One (1) electric induction furnace, known as EU#303, installed in 1997, capacity: 70 parts per hour.
- (t) Two (2) electric hardening furnaces, known as EU#403 and EU#406, installed in 1996, capacity: 50 metal parts per hour.
- (u) One (1) electric hardening furnace, known as EU#404, installed in 1995, capacity: 50 metal parts per hour.
- (v) One (1) electric nitrating furnace, known as EU#402, installed in 1996, capacity: 50 metal parts per hour.
- (w) One (1) electric vacuum furnace, known as EU#401, installed in 1996, capacity: 5.0 metal parts per hour.
- (x) One (1) electric vacuum furnace, known as EU#418, installed in 2001, capacity: 5.0 metal parts per hour.
- (y) One (1) electric salt quench pot, installed in 2001.

Unpermitted Emission Units and Pollution Control Equipment

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

New Emission Units and Pollution Control Equipment

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

Existing Approvals

The source has been operating under previous approvals including, but not limited to, the following: Registration 003-4981-00182, issued November 22, 1995.

All conditions from previous approvals were incorporated into this permit.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (EF)
S-412	furnace	16.0	1.42	2,000	150
S-111	furnace	28.0	1.5	1,000	350
S-106	parts washer	12.0	1.5	2,500	180
S-107	parts washer	17.0	1.5	2,500	180
S-101	furnace	28.0	2.36	2,000	1,600
S-402	nitration furnace	12.0	0.08	10	200
S-301	furnace	10.0	0.5	300	150
S-302	furnace	9.0	0.5	300	150

Enforcement Issue

There are no enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the operation be approved. 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 December 28, 2000, with additional information received on November 26, 2001.

Emission Calculations

See pages 1 through 3 of 3 of Appendix A of this document for detailed emissions calculations.

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit 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	0.432
PM ₁₀	0.715
SO ₂	0.030
VOC	0.273
CO	4.17
NO _x	4.96

HAPS	Potential To Emit (tons/year)
TOTAL	0.094

The potential to emit (as defined in 326 IAC 2-5.1-2) of PM and PM₁₀ are less than five (5) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-1.1-3.

Actual Emissions

No previous emission data has been received from the source.

County Attainment Status

The source is located in Allen County.

Pollutant	Status
PM ₁₀	attainment
SO ₂	attainment
NO ₂	attainment
Ozone	attainment
CO	attainment
Lead	attainment

- (a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Allen County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR Part 52.21.

(b) Allen County has been classified as attainment or unclassifiable for all remaining criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(c) Fugitive Emissions

Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2, 40 CFR Part 52.21, 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 particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

Source Status

Existing Source PSD, Part 70 or FESOP Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (tons/yr)
PM	0.101
PM ₁₀	0.384
SO ₂	0.030
VOC	0.273
CO	4.17
NO _x	4.96

(a) This existing source is **not** a major stationary source because no attainment regulated pollutant is emitted at a rate of two hundred-fifty (250) tons per year or more, and it is not in one of the 28 listed source categories.

(b) These emissions were based on the application submitted by the applicant.

Part 70 Permit Determination.

326 IAC 2-7 (Part 70 Permit Program)

For this existing source, the total emissions indicated in this Exemption 003-13737-00182, is still not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

(a) each criteria pollutant is less than one hundred (100) tons per year,

(b) a single hazardous air pollutant (HAP) is less than ten (10) tons per year, and

(c) any combination of HAPS is less than 25 tons/year.

This status is based on all the air approvals issued to the source. This status has been verified by the OAQ inspector assigned to the source.

Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.
- (b) There are still no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20, 40 CFR 61 and 40 CFR Part 63) applicable to this source.

State Rule Applicability - Entire Source

326 IAC 2-6 (Emission Reporting)

This source is located in Allen County and the potential to emit all criteria pollutants is less than one hundred (100) tons per year, therefore, 326 IAC 2-6 does not apply.

326 IAC 5-1 (Opacity)

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, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) 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 Part 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.

State Rule Applicability - Individual Facilities

326 IAC 6-3-2 (Process Operations)

The particulate matter (PM) from the two (2) abrasive blasting units, BB1 and BB2, with a combined process weight rate of 4,350 pounds per hour is limited to 6.9 pounds per hour, based on the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

The baghouse does not be in operation at all times that BB1 and BB2 are in operation, in order to comply with this limit.

Conclusion

The operation of this heat treating operation source shall be subject to the conditions of the attached proposed Exemption 003-13737-00182.

**Appendix A: Emission Calculations
Baghouse Operations**

Company Name: Precision Heat Treating Corporation
Address City IN Zip: 2711 Adams Center Road, Fort Wayne, Indiana 46896
Exemption: 003-13737
Plt ID: 003-00182
Reviewer: Paula M. Cognito
Date: December 28, 2000

Unit ID	Control Efficiency (%)	Grain Loading per Actual Cubic foot of Outlet Air (grains/cub. ft.)	Gas or Air Flow Rate (acfm.)	Emission Rate before Controls (lb/hr)	Emission Rate before Controls (tons/yr)	Emission Rate after Controls (lb/hr)	Emission Rate after Controls (tons/yr)
	98.0%	0.0003	600.0	0.077	0.338	0.002	0.007

Methodology

Emission Rate in lbs/hr (after controls) = (grains/cub. ft.) (sq. ft.) ((cub. ft./min.)/sq. ft.) (60 min/hr) (lb/7000 grains)

Emission Rate in tons/yr = (lbs/hr) (8760 hr/yr) (ton/2000 lb)

Emission Rate in lbs/hr (before controls) = Emission Rate (after controls): (lbs/hr)/(1-control efficiency)

Emission Rate in tons/yr = (lbs/hr) (8760 hr/yr) (ton/2000 lb)

**Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100**

**Company Name: Precision Heat Treating Corporation
Address City IN Zip: 2711 Adams Center Road, Fort Wayne Indiana 46896
Exemption: 003-13737
Plt ID: 003-00182
Reviewer: Paula M. Cognitore
Date: December 23, 2000**

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
11.3300	99.25

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	0.094	0.377	0.030	4.96	0.273	4.17

*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

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

See page 3 for HAPs emissions calculations.

**Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100**

HAPs Emissions

**Company Name: Precision Heat Treating Corporation
Address City IN Zip: 2711 Adams Center Road, Fort Wayne Indiana 46896
Exemption: 003-13737
Plt ID: 003-00182
Reviewer: Paula M. Cognitore
Date: December 23, 2000**

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	1.04E-04	5.96E-05	3.72E-03	8.93E-02	1.69E-04

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	Total HAPs
Potential Emission in tons/yr	2.48E-05	5.46E-05	6.95E-05	1.89E-05	1.04E-04	0.094

Methodology is the same as page 2.

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