

**CONSTRUCTION PERMIT
OFFICE OF AIR MANAGEMENT**

**Brinly - Hardy Company
3230 Industrial Parkway
Jeffersonville, IN, 47130**

is hereby authorized to construct

the equipment listed in the Page 2 of this permit.

This permit is issued to the above mentioned company (herein known as the Permittee) under the provisions of 326 IAC 2-1 and 40 CFR 52.780, with conditions listed on the attached pages.

Construction Permit No.: CP-019-10477-00098	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

- (a) one (1) powder coating application booth, identified as PC-A, coating a maximum of 20,000 metal parts per hour, utilizing electrostatic air atomized spray guns and a combination dry filter and cyclone as particulate control, exhausting within the building,
- (b) one (1) powder coating application booth, identified as PC-B, coating a maximum of 20,000 metal parts per hour, utilizing electrostatic air atomized spray guns and a dry filter as particulate control, exhausting within the building,
- (c) one (1) six stage conveyerized wash system with a maximum throughput of 12.5 tons of metal parts per hour, exhausting at stacks 1 and 2,
- (d) six (6) robot MIG welding stations exhausting to stack 7 and consisting of:
 - (1) two (2) stations with a maximum capacity of 18.7 pounds of welding wire per hour,
 - (2) two (2) stations with a maximum capacity of 16 pounds of welding wire per hour,
 - (3) one (1) stations with a maximum capacity of 12.6 pounds of welding wire per hour, and
 - (4) one (1) stations with a maximum capacity of 26.6 pounds of welding wire per hour,
- (e) four (4) manual MIG welding stations with a maximum capacity of 26.6 pounds of welding wire per hour, exhausting at stacks 8 and 9,
- (f) One (1) tool and die bead blaster, identified as BB1, with a maximum capacity of 110 pounds of glass bead per hour, using a dust bag as particulate control, and exhausting within the building,
- (g) Three (3) metal grinders, identified as MG1-3, with a maximum capacity of 100 pounds of metal die parts per hour, using a centrifugal dust collector as particulate control, and exhausting within the building,
- (h) one (1) boiler, with a rated heat input of 6 million British thermal units (MMBtu) per hour, exhausting at stack 3,
- (i) one (1) drying oven, with a rated heat input of 2.5 MMBtu per hour, exhausting at stack 4,
- (j) one (1) curing oven, with a rated heat input of 5.5 MMBtu per hour, exhausting at stack 5 and 6,
- (k) One (1) controlled pyrolysis cleaning furnace, rated at 0.95 million British thermal units (MMBtu) per hour, utilizing one (1) direct flame afterburner, rated at 0.56 million MMBtu per hour as control and exhausting at stack 10,
- (l) One (1) heat treating furnace, identified as tool and die heat treating furnace, rated at 0.078 million British thermal units (MMBtu) per hour, exhausting at stack 11,
- (m) One (1) draw furnace, identified as tool and die draw furnace, rated at 0.18 million British thermal units (MMBtu) per hour, exhausting at stack 11, and
- (n) One (1) furnace/air make up unit, identified as blue furnace, rated at 0.18 million British thermal units (MMBtu) per hour, exhausting at stack 12.

Construction Conditions

General Construction Conditions

1. That the data and information supplied with the application shall be considered part of this permit. Prior to any proposed change in construction which may affect allowable emissions, the change must be approved by the Office of Air Management (OAM).
2. That this permit to construct does not relieve the permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

Effective Date of the Permit

3. That pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.
4. That pursuant to 326 IAC 2-1-9(b)(Revocation of Permits), the Commissioner may revoke this permit if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.
5. That notwithstanding Construction Condition No. 6, all requirements and conditions of this construction permit shall remain in effect unless modified in a manner consistent with procedures established for modifications of construction permits pursuant to 326 IAC 2 (Permit Review Rules).

First Time Operation Permit

6. That this document shall also become a first-time operation permit pursuant to 326 IAC 2-1-4 (Operating Permits) when, prior to start of operation, the following requirements are met:
 - (a) The attached affidavit of construction shall be submitted to the Office of Air Management (OAM), Permit Administration & Development Section, verifying that the facilities were constructed as proposed in the application. The facilities covered in the Construction Permit may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM.
 - (b) If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.
 - (c) Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.
 - (d) The operation permit will be subject to annual operating permit fees pursuant to 326 IAC 2-7-19 (Fees)

(e) Pursuant to 326 IAC 2-7-4, the Permittee shall apply for a Title V operating permit within twelve (12) months after the source becomes subject to Title V. This 12-month period starts at the postmarked submission date of the Affidavit of Construction. If the construction is completed in phases, the 12-month period starts at the postmarked submission date of the Affidavit of Construction that triggers the Title V applicability. The operation permit issued shall contain as a minimum the conditions in the Operation Conditions section of this permit.

7. That when the facility is constructed and placed into operation the following operation conditions shall be met:

Operation Conditions

General Operation Conditions

1. That the data and information supplied in the application shall be considered part of this permit. Prior to any change in the operation which may result in an increase in allowable emissions exceeding those specified in 326 IAC 2-1-1 (Construction and Operating Permit Requirements), the change must be approved by the Office of Air Management (OAM).
2. That the permittee shall comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder.

Preventive Maintenance Plan

3. That pursuant to 326 IAC 1-6-3 (Preventive Maintenance Plans), the Permittee shall prepare and maintain a preventive maintenance plan, including the following information:
 - (a) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control device.
 - (b) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions.
 - (c) Identification of the replacement parts which will be maintained in inventory for quick replacement.

The preventive maintenance plan shall be submitted to IDEM, OAM upon request and shall be subject to review and approval.

Transfer of Permit

4. That pursuant to 326 IAC 2-1-6 (Transfer of Permits):
 - (a) In the event that ownership of this lawn and garden equipment manufacturing operation is changed, the Permittee shall notify OAM, Permit Branch, within thirty (30) days of the change. Notification shall include the date or proposed date of said change.

- (b) The written notification shall be sufficient to transfer the permit from the current owner to the new owner.
- (c) The OAM shall reserve the right to issue a new permit.

Permit Revocation

5. That pursuant to 326 IAC 2-1-9(a)(Revocation of Permits), this permit to construct and operate may be revoked for any of the following causes:

- (a) Violation of any conditions of this permit.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.
- (d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.
- (e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of 326 IAC 2-1 (Permit Review Rules).

Availability of Permit

6. That pursuant to 326 IAC 2-1-3(l), the Permittee shall maintain the applicable permit on the premises of this source and shall make this permit available for inspection by the IDEM, or other public official having jurisdiction.

Performance Testing

7. That pursuant to 326 IAC 2-1-3 (Construction and Operating Permit Requirements) compliance stack tests shall be performed for particulate matter from one of the powder coating operations identified as PC-A or PC-B to determine compliance with Operation Condition # 12(b) within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up. These tests shall be performed according to 326 IAC 3-2.1 (Source Sampling Procedures) using the methods specified in the rule or as approved by the Commissioner.

Malfunction Condition

8. That pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

- (a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM) or appointed representative upon request.

- (b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAM, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.
- (c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a)(1) through (6).
- (d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

Annual Emission Reporting

9. That pursuant to 326 IAC 2-6 (Emission Reporting), the Permittee must annually submit an emission statement for the source. This statement must be received by April 15 of each year and must comply with the minimum requirements specified in 326 IAC 2-6-4. The annual statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Management
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

The annual emission statement covers the twelve (12) consecutive month time period starting December 1 and ending November 30.

Emission Offset Minor Source Limit

10. The VOC usage in powder coating operations PC-A and PC-B (not including natural gas combustion emissions) shall be limited to 98.51 tons per twelve (12) month consecutive period, rolled on a monthly basis. This limit, when combined with VOC emissions from the natural gas combustion units shall limit the sourcewide potential to emit VOC to less than 100 tons per twelve (12) month consecutive period. Therefore, the requirements of 326 IAC 2-3 (Emission Offset) do not apply.

During the first 12 months of operation, the input raw material usage shall be limited such that the total usage divided by the accumulated months of operation shall not exceed the limit specified.

Opacity Limitations

11. 326 IAC 5-1 (Opacity Limitations)
That pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of thirty percent (30%) 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.

Particulate Matter Limitation

12. (a) That pursuant to 326 IAC 6-2 (Particulate Emissions Limitations for Sources of Indirect Heating), the particulate matter (PM) emissions from the 6.0 million BTU/hour boiler shall be limited to 0.6 pounds/MMBTU heat input.

The limitation was calculated using the lesser of 0.6 pounds per MMBtu and the following equation:

$$Pt = \frac{1.09}{Q^{0.26}} \quad \text{where: } Pt = \text{maximum allowable particulate matter (PM) emitted per MMBTU heat input}$$

$Q = \text{total source max. indirect heater input}$
 $= 6.00 \text{ MMBTU/hr}$

- (b) That pursuant to 326 IAC 6-1-2(a), particulate matter (PM) emissions from the two (2) powder coating application booths, identified as PC-A and B, shall be limited to 0.03 grain/dry standard cubic foot.

- (c) Pursuant to 326 IAC 6-3-2 (Process Operations), the particulate matter (PM) from the:

- (i) The particulate matter emissions from the one (1) tool and die bead blaster, identified as BB1, shall be limited to 0.59 pounds per hour based on a process weight rate of 0.055 tons per hour and the following equation:

Interpolation and extrapolation 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 dust bags shall be in operation at all times the one (1) tool and die bead blaster, identified as BB1, is in operation, in order to comply with this limit.

- (ii) The particulate matter emissions from the three (3) metal grinders, identified as MG1-3, shall be limited to 0.55 pounds per hour based on a process weight rate of 0.050 tons per hour and the following equation:

Interpolation and extrapolation 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:

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

- (d) Daily inspections shall be performed to verify the placement, integrity and particle loading of the filters. To monitor the performance of the dry filters, weekly observations shall be made of the overspray from the powder coating booth stack while one or more of the booths are in operation. The Compliance Response Plan shall be followed whenever a condition exists which should result in a response step. Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.
- (e) Monthly inspections shall be performed of the coating emissions from the stack and the presence of overspray on the rooftops and the nearby ground. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when a noticeable change in overspray emission, or evidence of overspray emission is observed. The Compliance Response Plan shall be followed whenever a condition exists which should result in a response step. Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.
- (f) Additional inspections and preventive measures shall be performed as prescribed in the Preventive Maintenance Plan.

Fugitive Dust Emissions

- 13. That pursuant to 326 IAC 6-4 (Fugitive Dust Emissions), the permittee shall be in violation of 326 IAC 6-4 (Fugitive Dust Emissions) if any of the criteria specified in 326 IAC 6-4-2(1) through (4) are violated. Observations of visible emissions crossing the property line of the source at or near ground level must be made by a qualified representative of IDEM. [326 IAC 6-4-5(c)].

Volatile Organic Compound (VOC) Limitations

- 14. That pursuant to 326 IAC 8-2-9 (Miscellaneous Metal Coating Operations), the volatile organic compound (VOC) content of coatings applied to lawn and garden equipment shall be limited to 3.5 pounds per gallon of coating less water delivered to the applicator in a coating operation that is air dried or forced warm air dried at temperatures above 95°C Celsius.

Emission Minimization

- 15. That pursuant to 326 IAC 8-2-9 (Miscellaneous Metal Coating Operations), solvent sprayed from the application equipment during clean up or color changes shall be directed into containers. Such containers shall be closed as soon as such solvent spraying is complete, and the waste solvent shall be disposed of in such a manner that evaporation is minimized.

Reporting Requirements

16. That a log of information necessary to document compliance with operation permit condition no. 10 shall be maintained. These records shall be kept for at least the past 36 month period and made available upon request to the Office of Air Management (OAM).

- (a) A quarterly summary shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

within thirty (30) calendar days after the end of the quarter being reported in the format attached. These records shall include the coating, thinner and clean up solvent usage, material safety data sheet (MSDS) and the date of use.

- (b) Unless otherwise specified in this permit, any notice, report, or other submissions required by this permit shall be timely if:
- (i) Postmarked on or before the date it is due; or
 - (ii) Delivered by any other method if it is received and stamped by IDEM, OAM, on or before the date it is due.
- (c) All instances of deviations from any requirements of this permit must be clearly identified in such reports.
- (d) Any corrective actions taken as a result of an exceedance of a limit, an excursion from the parametric values, or a malfunction that may have caused excess emissions must be clearly identified in such reports.
- (e) The first report shall cover the period commencing the postmarked submission date of the Affidavit of Construction.

Emergency Reduction Plans

17. Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

- (a) The Permittee shall prepare written emergency reduction plans (ERPs) consistent with safe operating procedures.
- (b) These ERPs shall be submitted for approval to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

within 180 calendar days from the issuance date of this permit.

- (c) If the ERP is disapproved by IDEM, OAM, the Permittee shall have an additional thirty (30) days to resolve the differences and submit an approvable ERP.
- (d) These ERPs shall state those actions that will be taken, when each episode level is declared, to reduce or eliminate emissions of the appropriate air pollutants.
- (e) Said ERPs shall also identify the sources of air pollutants, the approximate amount of reduction of the pollutants, and a brief description of the manner in which the reduction will be achieved.
- (f) Upon direct notification by IDEM, OAM, that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate level. [326 IAC 1-5-3]

**Indiana Department of Environmental Management
Office of Air Management
Compliance Data Section**

Quarterly Report

Company Name: Brinly - Hardy Company
Location: 3230 Industrial Parkway, Jeffersonville, IN, 47130
Permit No.: CP-019-10477-00098
Source: Powder coating operations PC-A and PC-B
Pollutant: VOC usage
Limit: 98.51 tons per twelve (12) month consecutive period, rolled on a monthly basis

Year: _____

Month	Total VOC Usage This Month (tons)	Previous 11 Month VOC Usage (tons)	12 Month Total VOC Usage (tons)
Month 1			
Month 2			
Month 3			

Submitted by: _____

Title/Position: _____

Signature: _____

Date: _____

MALFUNCTION REPORT
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR MANAGEMENT
FAX NUMBER - (317) 233-5967

**This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6
and to qualify for the exemption under 326 IAC 1-6-4.**

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE: IT HAS POTENTIAL TO EMIT 25 LBS/HR PARTICULATES ? _____, 100 LBS/HR VOC ? _____, 100 LBS/HR SULFUR DIOXIDE ? _____ OR 2000 LBS/HR OF ANY OTHER POLLUTANT ? _____ EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION _____.

THIS MALFUNCTION RESULTED IN A VIOLATION OF: 326 IAC _____ OR, PERMIT CONDITION # _____ AND/OR PERMIT LIMIT OF _____

THIS INCIDENT MEETS THE DEFINITION OF 'MALFUNCTION' AS LISTED ON THE NEXT PAGE ? Y N

THIS MALFUNCTION IS OR WILL BE LONGER THAN THE ONE (1) HOUR REPORTING REQUIREMENT ? Y N

COMPANY: Brinly - Hardy Company PHONE NO. (812) 288-2241

LOCATION: (CITY AND COUNTY) Jeffersonville, Clark County

PERMIT NO. 019-10477 AFS PLANT ID: 019-00098 AFS POINT ID: _____ INSP: Joe Foyst

CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON: _____

DATE/TIME MALFUNCTION STARTED: ____ / ____ / 19____ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION:

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE ____ / ____ / 19____ AM/PM

TYPE OF POLLUTANTS EMITTED: TSP, PM-10, SO₂, VOC, OTHER: _____

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: _____

MEASURES TAKEN TO MINIMIZE EMISSIONS: _____

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL* SERVICES: _____

CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS: _____

CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT: _____

INTERIM CONTROL MEASURES: (IF APPLICABLE) _____

MALFUNCTION REPORTED BY: _____

TITLE: _____
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY: _____ DATE: _____ TIME: _____

Please note - This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

326 IAC 1-6-1 Applicability of rule

Sec. 1. The requirements of this rule (326 IAC 1-6) shall apply to the owner or operator of any facility which has the potential to emit twenty-five (25) pounds per hour of particulates, one hundred (100) pounds per hour of volatile organic compounds or SO₂, or two thousand (2,000) pounds per hour of any other pollutant; or to the owner or operator of any facility with emission control equipment which suffers a malfunction that causes emissions in excess of the applicable limitation.

326 IAC 1-2-39 “Malfunction” definition

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. (Air Pollution Control Board; 326 IAC 1-2-39; filed Mar 10, 1988, 1:20 p.m. : 11 IR 2373)

***Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

Indiana Department of Environmental Management Office of Air Management

Technical Support Document (TSD) for New Construction and Operation

Source Background and Description

Source Name:	Brinly - Hardy Company
Source Location:	3230 Industrial Parkway, Jeffersonville, IN, 47130
County:	Clark
Construction Permit No.:	CP-019-10477-00098
SIC Code:	3524
Permit Reviewer:	Phillip Ritz/EVP

The Office of Air Management (OAM) has reviewed an application from Brinly - Hardy Company relating to the construction and operation of a lawn and garden equipment manufacturing operation, consisting of the following equipment:

- (a) one (1) powder coating application booth, identified as PC-A, coating a maximum of 20,000 metal parts per hour, utilizing electrostatic air atomized spray guns and a combination dry filter and cyclone as particulate control, exhausting within the building,
- (b) one (1) powder coating application booth, identified as PC-B, coating a maximum of 20,000 metal parts per hour, utilizing electrostatic air atomized spray guns and a dry filter as particulate control, exhausting within the building,
- (c) one (1) six stage conveyorized wash system with a maximum throughput of 12.5 tons of metal parts per hour, exhausting at stacks 1 and 2,
- (d) six (6) robot MIG welding stations exhausting to stack 7 and consisting of:
 - (1) two (2) stations with a maximum capacity of 18.7 pounds of welding wire per hour,
 - (2) two (2) stations with a maximum capacity of 16 pounds of welding wire per hour,
 - (3) one (1) stations with a maximum capacity of 12.6 pounds of welding wire per hour, and
 - (4) one (1) stations with a maximum capacity of 26.6 pounds of welding wire per hour,
- (e) four (4) manual MIG welding stations with a maximum capacity of 26.6 pounds of welding wire per hour, exhausting at stacks 8 and 9,
- (f) One (1) tool and die bead blaster, identified as BB1, with a maximum capacity of 110 pounds of glass bead per hour, using a dust bag as particulate control, and exhausting within the building,
- (g) Three (3) metal grinders, identified as MG1-3, with a maximum capacity of 100 pounds of metal die parts per hour, using a centrifugal dust collector as particulate control, and exhausting within the building,
- (h) one (1) boiler, with a rated heat input of 6 million British thermal units (MMBtu) per hour, exhausting at stack 3,
- (i) one (1) drying oven, with a rated heat input of 2.5 MMBtu per hour, exhausting at stack 4,
- (j) one (1) curing oven, with a rated heat input of 5.5 MMBtu per hour, exhausting at stack 5 and 6,
- (k) One (1) controlled pyrolysis cleaning furnace, rated at 0.95 MMBtu per hour, utilizing one (1) direct flame afterburner, rated at 0.56 MMBtu per hour as control and exhausting at

- stack 10,
- (l) One (1) heat treating furnace, identified as tool and die heat treating furnace, rated at 0.078 MMBtu per hour, exhausting at stack 11,
 - (m) One (1) draw furnace, identified as tool and die draw furnace, rated at 0.18 MMBtu per hour, exhausting at stack 11, and
 - (n) One (1) furnace/air make up unit, identified as blue furnace, rated at 0.18 MMBtu per hour, exhausting at stack 12.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
1	6-Stage Converyorized Parts Washing	32.0	2.0	5,500	100
2	6-Stage Converyorized Parts Washing	38.7	2.0	5,500	100
3	Boiler	32.0	0.8	2,800	425
4	Drying Oven	37.5	1.5	4,420	250
5	Curing Oven	36.5	2.0	6,020	450
6	Curing Oven	36.5	2.0	6,400	450
7	MIG Welders	27	3	16,000	ambient
8	MIG Welders	28	2	5,500	ambient
9	MIG Welders	28	2.6	6,000	ambient
10	controlled pyrolysis cleaning furnace and direct flame afterburner	18	1.167	1600	1600
11	tool and die heat treating furnace	7	0.5	TBD	TBD
12	furnace/air make up unit	21.6	1.3	TBD	TBD

Enforcement Issue

IDEM is aware that the one (1) powder coating application booth, identified as PC-A, one (1) six stage conveyorized wash system, one (1) boiler, one (1) drying oven, one (1) curing oven, six (6) robot MIG welding stations and four (4) manual MIG welding stations have been constructed and operated prior to receipt of the proper permit. IDEM is reviewing this matter and will take appropriate action. This proposed permit is intended to satisfy the requirements of the construction permit rules.

Recommendation

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the following facts and conditions:

Information, unless otherwise stated, 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 16, 1998, with additional information received on March 1, 1999.

Emissions Calculations

See Appendix A (Emissions Calculation Spreadsheets) for detailed calculations (6 pages).

Total Potential and Allowable Emissions

Indiana Permit Allowable Emissions Definition (after compliance with applicable rules, based on 8,760 hours of operation per year at rated capacity):

Pollutant	Allowable Emissions (tons/year)	Potential Emissions (tons/year)
Particulate Matter (PM)	--	2102.14
Particulate Matter (PM10)	--	2102.14
Sulfur Dioxide (SO ₂)	--	0.05
Volatile Organic Compounds (VOC)	--	563.87
Carbon Monoxide (CO)	--	7.42
Nitrogen Oxides (NO _x)	--	8.83
Single Hazardous Air Pollutant (HAP)	--	0.15 (Magnesium)
Combination of HAPs	--	0.15

- (a) The potential emissions based on the rules cited are less than the allowable emissions, therefore, the potential emissions are used for the permitting determination.
- (b) Allowable emissions (as defined in the Indiana Rule) of particulate matter and volatile organic compounds are greater than 25 tons per year. Therefore, pursuant to 326 IAC 2-1, a construction permit is required.

County Attainment Status

- (a) Volatile organic compounds (VOC) and oxides of nitrogen are precursors for the formation of ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to the ozone standards. Clark County has been designated as nonattainment for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.
- (b) Clark County has been classified as attainment or unclassifiable for all other 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 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive PM emissions are not counted toward determination of PSD and Emission Offset applicability.

Source Status

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

Pollutant	Emissions (ton/yr)
PM	8.01
PM10	8.01
SO ₂	0.05
VOC	99.00
CO	7.42
NO _x	8.83

- (a) This new source is **not** a major stationary source because no attainment pollutant is emitted at a rate of 250 tons per year or greater, 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 2-2 and 2-3, and 40 CFR 52.21, the PSD and Emission Offset requirements do not apply.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This new source is subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

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

This new source shall apply for a Part 70 (Title V) operating permit within twelve (12) months after this source becomes subject to Title V.

Federal Rule Applicability

There are no New Source Performance Standards (326 IAC 12) and 40 CFR Part 60 applicable to this facility.

40 CFR Part 63 (National Emissions Standards for Hazardous Air Pollutants)

There are no National Emissions Standards for Hazardous Air Pollutants (NESHAP), 40 CFR 63, that are applicable to this source.

State Rule Applicability

326 IAC 2-2 (Prevention of Significant Deterioration)

This source is not a major source under 326 IAC 2-2 (PSD) because no attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not one of the twenty-eight (28) listed sources.

326 IAC 2-3 (Emission Offset)

The VOC usage in powder coating operations PC-A and PC-B (not including natural gas combustion emissions) shall be limited to less than 98.51 tons per twelve (12) month consecutive period, rolled on a monthly basis. This limit, when combined with VOC emissions from the natural gas combustion units shall limit the sourcewide potential to emit VOC to less than 100 tons per twelve (12) month consecutive period. Therefore, the requirements of 326 IAC 2-3 (Emission Offset) do not apply.

326 IAC 2-6 (Emission Reporting)

This facility is subject to 326 IAC 2-6 (Emission Reporting), because the source has the potential to emit more than 10 tons/yr of VOC in Clark county. Pursuant to this rule, the owner/operator of this facility must annually submit an emission statement of the facility. The annual statement must be received by April 15 of each year and must contain the minimum requirements as specified in 326 IAC 2-6-4.

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 Exemptions), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of thirty percent (30%) 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 6-1-2 (Particulate Emissions Limitations)

The particulate matter emissions from the two (2) powder coating application booths, identified as PC-A and B, are subject to the requirements of 326 IAC 6-1-2 (Particulate Emissions Limitations), since the source is located in Clark county. The rule requires that the particulate matter emissions be limited to 0.03 gr/dscf which limits the particulate matter emissions from PC-A to 3.09 pounds per hour or 13.52 tons per year, and PC-B to 1.84 pounds per hour or 8.05 tons per year. The source will comply with the requirements under 326 IAC 6-1-2 by utilizing dry filters for controlling particulate matter in the two (2) powder coating application booths, identified as PC-A and B. These limitations will also make 326 IAC 2-3 (Emission Offset) not applicable.

326 IAC 6-3-2 (Process Operations)

Pursuant to 326 IAC 6-3-2 (Process Operations), the particulate matter (PM) from the:

- (a) One (1) tool and die bead blaster, identified as BB1, shall be limited by the following:

Interpolation and extrapolation 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:

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

$$0.59 = 4.10 (0.055)^{0.67} \quad \text{where } E = 0.59 \text{ pounds per hour} \\ P = 0.055 \text{ tons per hour}$$

The dust bags shall be in operation at all times the one (1) tool and die bead blaster, identified as BB1, is in operation, in order to comply with this limit. (See Appendix A, page 5 of 6 for detailed emission calculations)

- (b) Three (3) metal grinders, identified as MG1-3, shall be limited by the following:

Interpolation and extrapolation 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:

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

$$0.55 = 4.10 (0.05)^{0.67} \quad \text{where } E = 0.55 \text{ pounds per hour} \\ P = 0.05 \text{ tons per hour}$$

According to the emission calculations, the three (3) metal grinders, identified as MG1-3 have a potential to emit (PTE) PM of 0.007 pounds per hour, and the source is in compliance with the requirement. (See Appendix A, page 4 of 6 for detailed emission calculations)

326 IAC 6-4 (Fugitive Dust Emissions)

This source is subject to 326 IAC 6-4 for fugitive dust emissions. Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions), fugitive dust shall not be visible crossing the boundary or property line of a source. Observances of visible emissions crossing property lines may be refuted by factual data expressed in 326 IAC 6-4-2(1), (2) or (3).

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

The application of surface coatings to metal surface in the two (2) powder coating application booths, identified as PC-A and B, are subject to 326 IAC 8-2-9 (Miscellaneous Metal Coating Operations), because potential VOC emissions for this operation are greater than 15 pounds per day. Pursuant to 326 IAC 8-2-9(d)(2) (Miscellaneous Metal Coating Operations), the volatile

organic compound (VOC) content of coatings and adhesives applied to the steel castings shall be limited to 3.5 pounds per gallon of coating less water delivered to the applicator in a coating operation that is air dried or forced warm air dried at temperatures above 95°C Celsius.

- (a) Pursuant to MSDS submitted by the applicant, and to the compliance calculations made, (see page 2 of 4 Appendix A) the one (1) Fifth Wheel Paint Booth, identified as 15-N-001 is in compliance with 326 IAC 8-2-9 (Miscellaneous Metal Coating Operations).

Solvent sprayed from the application equipment during clean up or color changes shall be directed into containers. Such containers shall be closed as soon as such solvent spraying is complete, and the waste solvent shall be disposed of in such a manner that evaporation is minimized.

326 IAC 8-7 (Specific VOC Reduction Requirements for Lake, Porter, Clark, and Floyd Counties)

This source is not subject to the requirements of 326 IAC 8-7, as the two (2) powder coating application booths, identified as PC-A and B, are subject to 326 IAC 8-2-9 (Miscellaneous Metal Coating), and are not included as affected facilities in determining whether the threshold for 326 IAC 8-7 rule applicability has been exceeded. The potential to emit for all affected facilities at the source (natural gas combustion units) is less than the rule applicability threshold of ten (10) tons per year for Clark County. Therefore, 326 IAC 8-7 (Specific VOC Reduction Requirements for Lake, Porter, Clark, and Floyd Counties) is not applicable.

Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of the 188 hazardous air pollutants set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Management (OAM) Construction Permit Application Form Y.

- (a) This new source will emit levels of air toxics less than those which constitute a major source according to Section 112 of the 1990 Amendments to Clean Air Act.
- (b) See attached spreadsheets for detailed air toxic calculations.

Conclusion

The construction of this lawn and garden equipment manufacturing operation will be subject to the conditions of the attached proposed **Construction Permit No. CP-019-10477-00098**.

Indiana Department of Environmental Management Office of Air Management

Addendum to the Technical Support Document for New Construction and Operation

Source Name:	Brinly - Hardy Company
Source Location:	3230 Industrial Parkway, Jeffersonville, IN, 47130
County:	Clark
Construction Permit No.:	CP-019-10477-00098
SIC Code:	3524
Permit Reviewer:	Phillip Ritz/EVP

On March 12, 1999, the Office of Air Management (OAM) had a notice published in the Evening News, Jeffersonville, Indiana, stating that Brinly - Hardy Company had applied for a construction permit to construct and operate a lawn and garden equipment manufacturing operation with control. The notice also stated that OAM proposed to issue a permit for this installation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

Upon further review, the OAM has decided to incorporate the following revisions into CP-019-10477-00098. (**bolded** language has been added, the language with a ~~line~~ through it has been deleted).

Performance Testing

- That pursuant to 326 IAC 2-1-3 (Construction and Operating Permit Requirements) compliance stack tests shall be performed for particulate matter from **one of the** powder coating operations **identified as** PC-A ~~and or~~ PC-B to determine compliance with Operation Condition # 12(b) within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up. These tests shall be performed according to 326 IAC 3-2.1 (Source Sampling Procedures) using the methods specified in the rule or as approved by the Commissioner.

Appendix A: Emission Calculations

Company Name: Brinly-Hardy Company
Address City IN Zip: 3230 Industrial Parkway, Jeffersonville, Indiana, 47130
CP: 019-10477
Pit ID: 019-00098
Reviewer: Phillip Ritz
Date: December 16, 1998

Uncontrolled Potential Emissions (tons/year)

Emissions Generating Activity							
Pollutant	Natural Gas Combustion	Paint Booth A	Paint Booth B	Tool and Die Bead Blaster	Metal Die Part Grinding	Welding	TOTAL
PM	0.67	1,040.21	1,040.21	18.40	0.03	2.62	2,102.14
PM10	0.67	1,040.21	1,040.21	18.40	0.03	2.62	2,102.14
SO2	0.05	0.00	0.00	0.00	0.00	0.00	0.05
NOx	8.83	0.00	0.00	0.00	0.00	0.00	8.83
VOC	0.49	281.69	281.69	0.00	0.00	0.00	563.87
CO	7.42	0.00	0.00	0.00	0.00	0.00	7.42
Any Single HAP	0.00	0.00	0.00	0.00	0.00	0.15 (Magnesium)	0.15
Total HAPs	0.00	0.00	0.00	0.00	0.00	0.15	0.15
Total emissions based on rated capacity at 8,760 hours/year.							

Controlled Potential Emissions (tons/year)

Emissions Generating Activity							
Pollutant	Natural Gas Combustion	Paint Booth A	Paint Booth B	Tool and Die Bead Blaster	Metal Die Part Grinding	Welding	TOTAL
PM	0.67	0.52	0.52	3.68	0.00	2.62	8.01
PM10	0.67	0.52	0.52	3.68	0.00	2.62	8.01
SO2	0.05	0.00	0.00	0.00	0.00	0.00	0.05
NOx	8.83	0.00	0.00	0.00	0.00	0.00	8.83
VOC	0.49	49.26	49.25	0.00	0.00	0.00	99.00
CO	7.42	0.00	0.00	0.00	0.00	0.00	7.42
Any Single HAP	0.00	0.00	0.00	0.00	0.00	0.15 (Magnesium)	0.15
Total HAPs	0.00	0.00	0.00	0.00	0.00	0.15	0.15
Total emissions based on rated capacity at 8,760 hours/year, after control.							

**Appendix A: Emissions Calculations
VOC and Particulate
From Surface Coating Operations**

**Company Name: Brinly-Hardy Company
Address City IN Zip: 3230 Industrial Parkway, Jeffersonville, Indiana, 47130
CP: 019-10477
Plt ID: 019-00098
Reviewer: Phillip Ritz
Date: December 16, 1998**

Booth A																
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
30-6066 Corvel Green	10.4	1.00%	1.0%	0.0%	0.0%	99.00%	0.00460	20000.000	0.00	0.00	0.00	0.00	0.00	1040.21	0.00	75%
30-6142 Corvel AG Green	10.5	1.00%	1.0%	0.0%	0.0%	99.00%	0.00450	20000.000	0.00	0.00	0.00	0.00	0.00	1025.40	0.00	75%
30-6172 Corvel Bright Green ACII	11.5	1.00%	1.0%	0.0%	0.0%	99.00%	0.00410	20000.000	0.00	0.00	0.00	0.00	0.00	1024.04	0.00	75%
30-7121 Corvel Black	11.6	1.00%	1.0%	0.0%	0.0%	99.00%	0.00410	20000.000	0.00	0.00	0.00	0.00	0.00	1031.15	0.00	75%
IF-2779 Red Urethane 200 DR	10.0	6.70%	0.0%	6.7%	0.0%	93.30%	0.00480	20000.000	0.67	0.67	64.31	1543.53	281.69	980.67	0.72	75%

State Potential Emissions

Add worst case coating to all solvents

64.31 1543.53 281.69 1040.21

Limit Usage: VOC	Control Efficiency:		Limit Usage: VOC lbs per Hour	Limit Usage: VOC lbs per Day	Limit Usage: VOC tons per Year	Controlled PM tons/yr
	VOC	PM				
82.51%	0.00%	99.95%	11.25	269.92	49.26	0.52

Booth B																
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
30-6066 Corvel Green	10.4	1.00%	1.0%	0.0%	0.0%	99.00%	0.00460	20000.000	0.00	0.00	0.00	0.00	0.00	1040.21	0.00	75%
30-6142 Corvel AG Green	10.5	1.00%	1.0%	0.0%	0.0%	99.00%	0.00450	20000.000	0.00	0.00	0.00	0.00	0.00	1025.40	0.00	75%
30-6172 Corvel Bright Green ACII	11.5	1.00%	1.0%	0.0%	0.0%	99.00%	0.00410	20000.000	0.00	0.00	0.00	0.00	0.00	1024.04	0.00	75%
30-7121 Corvel Black	11.6	1.00%	1.0%	0.0%	0.0%	99.00%	0.00410	20000.000	0.00	0.00	0.00	0.00	0.00	1031.15	0.00	75%
IF-2779 Red Urethane 200 DR	10.0	6.70%	0.0%	6.7%	0.0%	93.30%	0.00480	20000.000	0.67	0.67	64.31	1543.53	281.69	980.67	0.72	75%

State Potential Emissions

Add worst case coating to all solvents

64.31 1543.53 281.69 1040.21

Limit Usage: PM	Limit Usage: VOC	Control Efficiency:		Limit Usage: VOC lbs per Hour	Limit Usage: VOC lbs per Day	Limit Usage: VOC tons per Year	Controlled PM tons/yr
		VOC	PM				
0.00%	82.52%	0.00%	99.95%	11.24	269.86	49.25	0.52

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)

Total = Worst Coating + Sum of all solvents used

IF-2779 Red Urethane 200 DR has VOC emissions resulting from Caprolactam which is emitted at cure temperatures and is not a listed HAP.

**VOC emissions result during the curing process.

**Appendix A: Process Particulate Emissions
Metal Die Part Grinding**

Company Name: Brinly-Hardy Company
Address City IN Zip: 3230 Industrial Parkway, Jeffersonville, Indiana, 47130
CP: 019-10477
Plt ID: 019-00098
Reviewer: Phillip Ritz
Date: December 16, 1998

State Potential Emissions (tons/year)				
A. Type D Roto Clone Centrifugal Dust Collector (Cyclone)				
Process	No. of Units	Tons of Particulate Matter Collected Per Year by Cyclone	Control Efficiency	Total (tons/yr)
Roto Clone Centrifugal Dust Collector	1	0.03000	86.00%	0.03
Total Emissions Based on Rated Capacity at 8,760 Hours/Year				0.03
Federal Potential Emissions (tons/year)				
A. Baghouses				
Process	No. of Units	Tons of Particulate Matter Collected Per Year by Cyclone	Control Efficiency	Total (tons/yr)
Roto Clone Centrifugal Dust Collector	1	0.03000	86.00%	0.00
Total Emissions Based on Rated Capacity at 8,760 Hours/Year and source controls				0.00

Methodology:State Potential (uncontrolled):

Baghouse (tons/yr) = No. Units * Loading (grains/acf) * Air/Cloth Ratio (acfm/ft²) * Filter Area (ft²) * 1 lb/7,000 grains * 60 min/hr * 8760 hr/yr * 1 ton/2,000 lbs * 1/(1-Control Efficiency)

ESP (tons/yr) = No. Units * Loading (grains/acf) * Face Velocity (ft/sec) * Surface Area (ft²) * 1 lb/7,000 grains * 60 sec/min * 60 min/hr * 8760 hr/yr * 1 ton/2,000 lbs * 1/(1-Control Efficiency)

Scrubber (tons/yr) = No. Units * Loading (grains/acf) * Flow Rate (gpm) * 1/Liquid to Air Ratio (gpm/1,000 acfm) * 1 lb/7,000 grains * 60 min/hr * 8760 hr/yr * 1 ton/2,000 lbs * 1/(1-Control Efficiency)

Federal Potential (controlled):

Baghouse (tons/yr) = No. Units * Loading (grains/acf) * Air/Cloth Ratio (acfm/ft²) * Filter Area (ft²) * 1 lb/7,000 grains * 60 min/hr * 8760 hr/yr * 1 ton/2,000 lbs * 1/(1-Control Efficiency)

ESP (tons/yr) = No. Units * Loading (grains/acf) * Face Velocity (ft/sec) * Surface Area (ft²) * 1 lb/7,000 grains * 60 sec/min * 60 min/hr * 8760 hr/yr * 1 ton/2,000 lbs * 1/(1-Control Efficiency)

Scrubber (tons/yr) = No. Units * Loading (grains/acf) * Flow Rate (gpm) * 1/Liquid to Air Ratio (gpm/1,000 acfm) * 1 lb/7,000 grains * 60 min/hr * 8760 hr/yr * 1 ton/2,000 lbs * 1/(1-Control Efficiency)

Company Name: Brinly-Hardy Company
Address City IN Zip: 3230 Industrial Parkway, Jeffersonville, Indiana, 47130
CP: 019-10477
Plt ID: 019-00098
Reviewer: Phillip Ritz
Date: December 16, 1998

PROCESS	Number of Stations	Max. electrode consumption per station (lbs/hr)	EMISSION FACTORS * (lb pollutant / lb electrode)				EMISSIONS (lb/hr)				TOTAL HAPS (lb/hr)
			PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
WELDING Stack 7											
Metal Inert Gas (MIG)(E70S-3)	1	12.6	0.0051	0.0003			0.064	0.00378	0.000	0	0.004
Metal Inert Gas (MIG)(E70S-3)	1	26.6	0.0051	0.0003			0.136	0.00798	0.000	0	0.008
Metal Inert Gas (MIG)(E70S-3)	1	16	0.0051	0.0003			0.082	0.0048	0.000	0	0.005
Metal Inert Gas (MIG)(E70S-3)	1	26.6	0.0051	0.0003			0.136	0.00798	0.000	0	0.008
Metal Inert Gas (MIG)(E70S-3)	1	16	0.0051	0.0003			0.082	0.0048	0.000	0	0.005
Metal Inert Gas (MIG)(E70S-3)	1	18.7	0.0051	0.0003			0.095	0.00561	0.000	0	0.006
WELDING Stack 8											
Metal Inert Gas (MIG)(E70S-3)	1	26.6	0.0051	0.0003			0.136	0.00798	0.000	0	0.008
Metal Inert Gas (MIG)(E70S-3)	1	26.6	0.0051	0.0003			0.136	0.00798	0.000	0	0.008
Metal Inert Gas (MIG)(E70S-3)	1	26.6	0.0051	0.0003			0.136	0.00798	0.000	0	0.008
Metal Inert Gas (MIG)(E70S-3)	1	18.7	0.0051	0.0003			0.095	0.00561	0.000	0	0.006
EMISSION TOTALS							PM = PM10	Mn	Ni	Cr	Total HAPS
Potential Emissions lbs/hr							0.60	0.04	0.00	0.00	0.04
Potential Emissions lbs/day							14.35	0.84	0.00	0.00	0.84
Potential Emissions tons/year							2.62	0.15	0.00	0.00	0.15

METHODOLGY

*Emission Factors are default values for carbon steel unless a specific electrode type is noted in the Process column. Consult AP-42 or other reference for different electrode types.
Welding emissions, lb/hr: (# of stations)(max. lbs of electrode used/hr/station)(emission factor, lb. pollutant/lb. of electrode used)
Emissions, lbs/day = emissions, lbs/hr x 24 hrs/day
Emissions, tons/yr = emissions, lb/hr x 8,760 hrs/day x 1 ton/2,000 lbs.
Welding and other flame cutting emission factors are from an internal training session document.
See AP-42, Chapter 12.19 for additional emission factors for welding.

Appendix A: Emission Calculations

Tool and Die Bead Blaster

Company Name: Brinly-Hardy Company
 Address City IN Zip: 3230 Industrial Parkway, Jeffersonville, Indiana, 47130
 CP: 019-10477
 Pit ID: 019-00098
 Reviewer: Phillip Ritz
 Date: December 16, 1998

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	

Table 2 - Density of Abrasives (lb/ft3)

Abrasive	Density (lb/ft3)
Al oxides	160
Sand	99
Steel	487

Table 3 - Sand Flow Rate (FR1) Through Nozzle (lb/hr)

Flow rate of Sand Through a Blasting Nozzle as a Function of Nozzle pressure and Internal Diameter

Internal diameter, in	Nozzle Pressure (psig)							
	30	40	50	60	70	80	90	100
1/8	28	35	42	49	55	63	70	77
3/16	65	80	94	107	122	135	149	165
1/4	109	138	168	195	221	255	280	309
5/16	205	247	292	354	377	420	462	507
3/8	285	355	417	477	540	600	657	720
7/16	385	472	560	645	755	820	905	940
1/2	503	615	725	835	945	1050	1160	1265
5/8	820	990	1170	1336	1510	1680	1850	2030
3/4	1140	1420	1670	1915	2160	2400	2630	2880
1	2030	2460	2900	3340	3780	4200	4640	5060

Calculations

Adjusting Flow Rates for Different Abrasives and Nozzle Diameters

Flow Rate (FR) = Abrasive flow rate (lb/hr) with internal nozzle diameter (ID)
 FR1 = Sand flow rate (lb/hr) with internal nozzle diameter (ID1) From Table 3 =
 D = Density of abrasive (lb/ft3) From Table 2 =
 D1 = Density of sand (lb/ft3) =
 ID = Actual nozzle internal diameter (in) =
 ID1 = Nozzle internal diameter (in) from Table 3 =

420
99
99
0.312
0.312

Flow Rate (FR) (lb/hr) = 420.000 per nozzle

Uncontrolled Emissions (E, lb/hr)

EF = emission factor (lb PM/ lb abrasive) From Table 1 =
 FR = Flow Rate (lb/hr) =
 w = fraction of time of wet blasting =
 N = number of nozzles =

0.010
420.000
0
1

Uncontrolled Emissions =	4.20 lb/hr
	18.40 ton/yr
*Controlled Emissions =	0.84 lb/hr
	3.68 ton/yr

METHODOLOGY

Emission Factors from Stappa Alapco, Section 3 "Abrasive Blasting"
 Ton/yr = lb/hr X 8760 hr/yr X ton/2000 lbs
 Flow Rate (FR) (lb/hr) = FR1 x (ID/ID1)2 x (D/D1)
 E = EF x FR x (1-w/200) x N
 w should be entered in as a whole number (if w is 50%, enter 50)
 *Utilizing Dust Bag with 80% control efficiency.

**Appendix A: Emission Calculations
Natural Gas Combustion
MM Btu/hr 0.3 - < 100**

**Company Name: Brinly-Hardy Company
Address City IN Zip: 3230 Industrial Parkway, Jeffersonville, Indiana, 47130
CP: 019-10477
Plt ID: 019-00098
Reviewer: Phillip Ritz
Date: December 16, 1998**

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
20.2	176.7

Heat Input Capacity includes:

- One (1) controlled pyrolysis cleaning furnace, with a rated heat input of 0.95 MMBtu per hour
- One (1) afterburner on controlled pyrolysis cleaning furnace, with a rated heat input of 0.56 MMBtu per hour
- One (1) heat treating furnace, with a rated heat input of 0.078 MMBtu per hour
- One (1) draw furnace, with a rated heat input of 0.18 MMBtu per hour
- One (1) furnace / air make-up unit, with a rated heat input of 4.4 MMBtu per hour
- Boiler, 6 MMBtu per hour
- Drying Oven, 2.5 MMBtu per hour
- Curing Oven, 5.5 MMBtu per hour

	Pollutant					
	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	7.6	7.6	0.6	100.0	5.5	84.0
Potential Emission in tons/yr	0.67	0.67	0.05	8.83	0.49	7.42

Methodology:

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Emission Factors for NOx: uncontrolled = 100, Low Nox Burner = 50, Flue gas recirculation = 32

All PM is assumed to be less than 1.0 micrometer in diameter. Therefore, the PM emission factors may be used to estimate PM10, PM2.5, and PM1 emissions.

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

Emission Factors from AP 42, Chapter 1.4, Tables 1.4-1 and 1.4-2, SCC #1-01-006-02, #1-02-006-02, #1-03-006-02, #1-03-006-03

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