



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: October 10, 2007
RE: Lengacher's Furniture & Cabinets / 003-25226-00357
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

Elson Lengacher
Lengacher's Furniture & Cabinets
16306 Cuba Road
Spencerville, Indiana 46788

October 10, 2007

Re: Registered Construction and Operation Status,
R003-25226-00357

Dear Mr. Lengacher:

The application from Lengacher's Furniture & Cabinets, received on August 30, 2007, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.5, it has been determined that the following stationary cabinet manufacturing facility, located at 16306 Cuba Road, Spencerville, Indiana 46788, is classified as registered:

- (a) One (1) spray booth for applying stain or topcoat, using one (1) high volume low-pressure (HVLP) spray gun, identified as SB1, constructed in 1999, with a maximum capacity of 0.125 gallon of coatings or solvent per hour, with particulate emissions controlled by dry filters, and exhausting to stack S1.
- (b) Woodworking equipment, identified as WW, constructed in 1999, with a total maximum capacity of 27 pounds of wood per hour, using one (1) baghouse, identified as WW-DC1, and two (2) down draft tables, identified as DT1 and DT2, to control particulate emissions, and exhausting inside building. Woodworking equipment is identified as:
 - One (1) hinge router, identified as HR1;
 - One (1) drum sander, identified as DS1;
 - One (1) chop saw, identified as CS1;
 - One (1) edge sander, identified as ES1;
 - One (1) shelf drill, identified as SD1;
 - One (1) table saw, identified as TS1; and
 - One (1) planer, identified as PL1.
- (c) One (1) propane-fired space heater, identified as H1, constructed in 1999, with a maximum capacity of 0.10 MMBtu/hr, and exhausting to stack H#1.
- (d) One (1) diesel-fired generator, identified as G1, constructed in 1999, with a maximum capacity of 0.15 MMBtu/hr, and exhausting to stack D#1.

1. 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 forty percent (40%) 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 15 minutes (60 readings in a 6-hour period 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.

2. 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)

Pursuant to 326 IAC 6-3-2(e), particulate emissions from the woodworking operation (WW) shall not exceed 0.551 pounds per hour when operating at a process weight of 27 pounds per hour.

The baghouse filters shall be in operation at all times the woodworking operation (WW) is in operation, in order to comply with this limit.

3. 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).

4. 326 IAC 8-2-12 (Wood Furniture and Cabinet Coating)

To render the requirements of 326 IAC 8-2-12 (Wood Furniture and Cabinet Coating) not applicable, the owner or operator of this source shall comply with the following:

- (a) The VOC usage for surface coating booth SB1 shall be less than 15.0 pounds per day.
- (b) To document compliance with this limit, the owner or operator of this source shall maintain records for the total VOC usage for surface coating booth SB1 each day. These records shall be taken as stated below and shall be complete and sufficient to establish compliance with the VOC emission limit for surface coating booth SB1:
 - (1) The amount and VOC content of each coating material, dilution solvent, and cleanup solvent used for each day. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount of materials used.
 - (2) The total VOC usage for each day
- (c) Records of all required monitoring data, reports and support information required by this exemption shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the owner or operator of this source, the owner or operator of this source shall furnish the records to the Commissioner within a reasonable time.
- (d) Unless otherwise specified in this exemption, all record keeping requirements not already legally required shall be implemented within ninety (90) days of approval date of this exemption.

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:

**Indiana Department of Environmental Management
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.

Original signed by,

Nisha Sizemore, Chief
Permits Branch
Office of Air Quality

NS/sec

Attachment: TSD, Appendix A

cc: File - Allen County
Allen County Health Department
Air Compliance Section - Patrick Burton
Permit Tracking
Compliance Data Section
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:	Lengacher's Furniture & Cabinets
Address:	16306 Cuba Road
City:	Spencerville, Indiana 46788
Phone #:	(260) 657-1393
Registration #:	0003-25226-00357

Certification by the Authorized Individual
I hereby certify that Lengacher's Furniture & Cabinets is still in operation and is in compliance with the requirements of Registration 003-25226-00357.
Name (typed):
Title:
Signature:
Date:

**Indiana Department of Environmental Management
Office of Air Quality**

Technical Support Document (TSD) for a Registration

Source Background and Description

Source Name:	Lengacher's Furniture & Cabinets
Source Location:	16306 Cuba Road, Spencerville, Indiana 46788
County:	Allen
SIC Code:	2431
Registration No.:	003-25226-00357
Permit Reviewer:	Sandra Carr

The Office of Air Quality (OAQ) has reviewed an application from Lengacher's Furniture & Cabinets relating to the operation of a stationary cabinet manufacturing facility.

Unpermitted Emission Units and Pollution Control Equipment

The source consists of the following unpermitted emission units:

- (a) One (1) spray booth for applying stain or topcoat, using one (1) high volume low-pressure (HVLP) spray gun, identified as SB1, constructed in 1999, with a maximum capacity of 0.125 gallon of coatings or solvent per hour, with particulate emissions controlled by dry filters, and exhausting to stack S1.
- (b) Woodworking equipment, identified as WW, constructed in 1999, with a total maximum capacity of 27 pounds of wood per hour, using one (1) baghouse, identified as WW-DC1, and two (2) down draft tables, identified as DT1 and DT2, to control particulate emissions, and exhausting inside building. Woodworking equipment is identified as:
 - One (1) hinge router, identified as HR1;
 - One (1) drum sander, identified as DS1;
 - One (1) chop saw, identified as CS1;
 - One (1) edge sander, identified as ES1;
 - One (1) shelf drill, identified as SD1;
 - One (1) table saw, identified as TS1; and
 - One (1) planer, identified as PL1.
- (c) One (1) propane-fired space heater, identified as H1, constructed in 1999, with a maximum capacity of 0.10 MMBtu/hr, and exhausting to stack H#1.
- (d) One (1) diesel-fired generator, identified as G1, constructed in 1999, with a maximum capacity of 0.15 MMBtu/hr, and exhausting to stack D#1.

Existing Approvals

No previous air approvals have been issued to this source.

Enforcement Issue

- (a) IDEM is aware that equipment has been constructed and operated prior to receipt of the proper authorization (a Registration). The subject equipment is listed in this Technical

Support Document under the condition entitled "Unpermitted Emission Units and Pollution Control Equipment".

- (b) IDEM is reviewing this matter and will take appropriate action. This proposed Registration is intended to satisfy the requirements of the construction and operating permit rules.

Recommendation

The staff recommends to the Commissioner that this Registration 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.

A complete application for the purposes of this review was received on August 30, 2007.

Emission Calculations

See Appendix A of this document for detailed emission calculations (pages 1 through 10).

Potential to Emit of the Source Before Controls

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."

The following table reflects the existing source potential to emit. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit:

Pollutant	Potential to Emit (tons/year)
PM	23.31
PM10	23.31
SO ₂	0.24
VOC	4.02
CO	0.63
NO _x	2.97

HAPs	Potential to Emit (tons/year)
Xylene	0.52
Toluene	1.29
Formaldehyde	0.04
Ethylbenzene	0.04
Total	1.89

- (a) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) each criteria pollutant is less than twenty-five (25) tons per year but the potential to emit PM and PM10 are each 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 potential to emit (as defined in 326 IAC 2-1.1-1(16)) 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. Therefore, the source is not subject to the provisions of 326 IAC 2-7.

County Attainment Status

The source is located in Allen County

Pollutant	Status
PM ₁₀	attainment
PM _{2.5}	attainment
SO ₂	attainment
NO _x	attainment
8-hour Ozone	attainment
CO	attainment
Lead	attainment

Note: On September 6, 2007 the Indiana Air Pollution Control Board finalized a temporary emergency rule to redesignate Allen, Clark, Allen, Floyd, LaPorte, St. Joseph as attainment for the 8-hour ozone standard.

- (a) Volatile organic compounds (VOC) and Nitrogen Oxides (NO_x) 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 emissions and NO_x emissions are considered when evaluating the rule applicability relating to ozone. Allen County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions and NO_x 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.
- (b) Allen County has been classified as attainment or unclassifiable in Indiana for all 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.
- (c) 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 particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

Source Status

New Source PSD 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	0.59
PM-10	0.59
SO ₂	0.24
VOC	4.02
CO	0.63
NO _x	2.97
Single HAP	1.29
Combination HAPs	1.89

This existing source is not a major stationary source under 326 IAC 2-2 (PSD) or 326 IAC 2-3 (Emission Offset), because no attainment regulated 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, 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 not subject to the Part 70 Permit requirements because the potential to emit (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 per year.

This status is based on the potential to emit calculations of the source (see Appendix A). 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 in this registration.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAP)(326 IAC 14, 20 and 40 CFR Parts 61, 63) included in the permit for this registration.
- (c) The requirements of the National Emission Standards for Hazardous Air Pollutants for Wood Furniture Manufacturing Operations (40 CFR 63, Subpart JJ, 326 IAC 20-14-1) are not included in this registration because this source is not a major source of HAPs as defined in 40 CFR 63.2.
- (d) The requirements of 40 CFR 60, Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines are not included in this permit for the electric generator, G1, because the generator was constructed prior to the applicable date of July 11, 2005.

State Rule Applicability – Entire Source

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

This source will be constructed after the applicability date of August 7, 1977, however, it is not in one of the 28 listed source categories defined in 326 IAC 2-2-1(gg)(1) and the uncontrolled potential to emit of all attainment regulated pollutants is less than 250 tons per year. Therefore, the requirements of 326 IAC 2-2 (PSD) 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 not subject to 326 IAC 2-6 (Emission Reporting), because it is located in Allen County, it is not required to have an operating permit under 326 IAC 2-7, Part 70 Permit Program, and it does not emit lead into the ambient air at levels equal to or greater than five (5) tons per year.

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, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) 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 in a six (6) hour period 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 6-4 (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).

State Rule Applicability - Surface Coating Operations

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

Pursuant to 326 IAC 6-3-1(b)(14), surface coating booth SB1 is exempt from the requirements of 326 IAC 6-3, because the uncontrolled potential particulate emissions are less than five hundred fifty-one thousandths (0.551) pound per hour.

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

The potential to emit of the surface coating booth (SB1) is less than twenty-five (25) tons of VOCs per year. Therefore, the requirements of 326 IAC 8-1-6 are not applicable.

326 IAC 8-2-12 (Wood Furniture and Cabinet Coating)

Pursuant to 326 IAC 8-2-1, the provisions of 326 IAC 8-2-12 apply to wood furnishing surface coating operations constructed after July 1, 1990, located in any county, and which have actual emissions of greater than fifteen (15) pounds per day before add-on controls. Wood furnishings (as defined by 326 IAC 8-2-12) include cabinets (kitchen, bath, and vanity), tables, beds, chairs, sofas (nonupholstered), art objects, and any other coated furnishings made of solid wood, wood composition, or simulated wood material. The potential to emit of surface coating booth SB1 is greater than fifteen (15) pounds per day, but the source has opted to limit the VOC input to less than fifteen (15) pounds per day in order to render the requirements of 326 IAC 8-2-12 not applicable. Therefore, the owner or operator of this source shall comply with the following:

- (a) The VOC usage for surface coating booth SB1 shall be less than 15.0 pounds per day.

Compliance with this limit renders the requirements of 326 IAC 8-2-12 (Wood Furniture and Cabinet Coating) not applicable.
- (b) To document compliance with this limit, the owner or operator of this source shall maintain records for the total VOC usage for surface coating booth SB1 each day. These records shall be taken as stated below and shall be complete and sufficient to establish compliance with the VOC emission limit for surface coating booth SB1:
 - (1) The amount and VOC content of each coating material, dilution solvent, and cleanup solvent used for each day. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount of materials used.
 - (2) The total VOC usage for each day.
- (c) Records of all required monitoring data, reports and support information required by this exemption shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be

physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the owner or operator of this source, the owner or operator of this source shall furnish the records to the Commissioner within a reasonable time.

- (d) Unless otherwise specified in this exemption, all record keeping requirements not already legally required shall be implemented within ninety (90) days of approval date of this exemption.

State Rule Applicability - Woodworking Operations

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

Pursuant to 326 IAC 6-3-2(e), particulate emissions from the woodworking operation (WW) shall not exceed 0.551 pounds per hour when operating at a process weight of 27 pounds per hour.

The baghouse filters shall be in operation at all times the woodworking operation (WW) are in operation, in order to comply with this limit.

Conclusion

The continued operation of this stationary woodworking and cabinet manufacturing facility shall be subject to the conditions of the attached Registration 003-25226-00357.

Company Name: Lengacher's Furniture & Cabinets
 Address: 16306 Cuba Road Spencerville, IN 46788
 Registration: 003-25226-00357
 Reviewer: SEC
 Date: September 20, 2007

Spray Booth SB1

Material	Density (lbs/gal)	Weight % Water	Weight % VOC (H2O & Organics)	Volume % Solids	Maximum Throughput (units/hr)	Gal of Mat. (gal/unit)	VOC per gal of coating (lbs/gal)	PTE of VOC (lbs/hour)	Actual VOC Emissions (tons/year)	PTE of PM/PM10 Before Controls (tons/year)	PTE of PM/PM10 After Controls (tons/year)	Actual Emissions of PM/PM10 Before Controls (tons/year)	Actual Emissions of PM/PM10 After Controls (tons/year)
4002 FC Stain	6.96	0.0%	76.60%	16.41%	0.025	0.500	5.33	0.07	0.07	0.04	0.01	0.01	0.00
HC 30 Sealer/Topcoat	7.96	0.0%	62.67%	29.53%	0.025	5.000	4.99	0.62	0.65	0.81	0.16	0.19	0.04
Blender 2739	7.02	0.0%	100.00%	0.00%	0.025	1.000	7.02	0.18	0.18	0.00	0.00	0.00	0.00
Totals								0.87	0.90	0.86	0.17	0.20	0.04

PTE VOC (lbs/24 hours) = 20.78 lb/24 hr day

Worst case = Coating with highest PTE (lb/hr) x 8 hours per day** = 4.99 lb/work day

* Maximum Usage as reported by source, based on materials used during an actual production run. Operator applies stain then allows it to dry. The next day operator applies sealer/topcoat to the cabinets to produce the finished product.

***Operation of spray booth is mutually exclusive, for either stain or topcoat. Operation is reported to be 2 days per week.

Blender 2739 is used to clean HVLP guns.

Maximum operating hours per year as reported by source are 5 days a week, 8 hours per day, 52 weeks per year.

Assume transfer efficiency of 50% for air atomization guns and control efficiency of 80% for dry filters.

Assume all VOC is emitted.

METHODOLOGY

VOC (lbs/gal) = Density (lbs/gal) x Weight % VOC (%)

PTE of VOC (lbs/hour) = Density (lbs/gal) x Weight % VOC x Maximum Usage (gals/hour)

PTE of VOC (tons/year) = Density (lbs/gal) x Weight % VOC x Maximum Usage (gals/hour) x 8760 (hours/year) x 1 ton/2000 lbs

Actual Emissions of VOC (tons/year) = Density (lbs/gal) x Weight % VOC x Maximum Usage (gals/hour) x 2080 (hours/year) x 1 ton/2000 lbs

PTE of PM/PM10 Before Controls (tons/year) = Density (lbs/gal) x Weight % Solids x Maximum Usage (gals/hour) x 8760 (hours/year) x 1 ton/2000 lbs x (1 - Transfer Efficiency %)

PTE of PM/PM10 After Controls (tons/year) = PTE PM/PM10 Before Controls (tons/year) x (1 - Control Efficiency %)

Actual Emissions of PM/PM10 Before Controls (tons/year) = Density (lbs/gal) x Weight % Solids x Maximum Usage (gals/hour) x 2080 (hours/year) x 1 ton/2000 lbs x (1 - Transfer Efficiency %)

Actual Emissions of PM/PM10 After Controls (tons/year) = PTE PM/PM10 Before Controls (tons/year) x (1 - Control Efficiency %)

Appendix A: Emission Calculations
HAP Emissions From Surface Coating Operations

Company Name: Lengacher's Furniture & Cabinets
Address: 16306 Cuba Road Spencerville, IN 46788
Registration: 003-25226-00357
Reviewer: SEC
Date: September 20, 2007

Spray Booth SB1

Material	Density (lbs/gal)	Maximum Throughput (units/hr)	Gal of Mat. (gal/unit)	Maximum Usage (gal/hour)	Weight % Xylene	Weight % Toluene	Weight % Formaldehyde	Weight % Ethylbenzene
FC Stain	6.96	0.025	0.500	0.013	0.00%	0.00%	0.00%	0.00%
HC 30 Sealer/Topcoat	7.96	0.025	5.000	0.125	12.00%	20.00%	1.00%	1.00%
Blender 2739	7.02	0.025	1.000	0.025	0.00%	55.00%	0.00%	0.00%

Material	Density (lbs/gal)	Maximum Throughput (units/hr)	Gal of Mat. (gal/unit)	Maximum Usage (gals/hour)	PTE of Xylene (tons/year)	PTE of Toluene (tons/year)	PTE of Formaldehyde (tons/year)	PTE of Ethylbenzene (tons/year)
FC Stain	6.96	0.025	0.500	0.013	0.00	0.00	0.00	0.00
HC 30 Sealer/Topcoat	7.96	0.025	5.000	0.125	0.52	0.87	0.04	0.04
Blender 2739	7.02	0.025	1.000	0.025	0.00	0.42	0.00	0.00
Totals					0.52	1.29	0.04	0.04

Material	Density (lbs/gal)	Maximum Throughput (units/hr)	Gal of Mat. (gal/unit)	Maximum Usage (gals/hour)	Actual Emissions of Xylene (tons/year)	Actual Emissions of Toluene (tons/year)	Actual Emissions of Formaldehyde (tons/year)	Actual Emissions of Ethylbenzene (tons/year)
FC Stain	6.96	0.025	0.500	0.013	0.00	0.00	0.00	0.00
HC 30 Sealer/Topcoat	7.96	0.025	5.000	0.125	0.12	0.21	0.01	0.01
Blender 2739	7.02	0.025	1.000	0.025	0.00	0.10	0.00	0.00
Totals					0.12	0.31	0.01	0.01

NOTE: MEK= methyl-ethyl ketone

Total PTE HAPs = 1.90 tons/year
Largest Single PTE HAPs = 1.29 tons/year
Actual HAP Emissions = 0.45 tons/year

METHODOLOGY

PTE HAPS (tons/year) = Density (lbs/gal) x Max. Usage (gals/hour) x Weight % HAP x 8760 (hrs/year) x 1 ton/2000 lbs
Actual HAPS (tons/year) = Density (lbs/gal) x Max. Usage (gals/hour) x Weight % HAP x 2080 (hrs/year) x 1 ton/2000 lbs
Maximum Usage (gallons/hour) = Maximum Throughput (units/hour) x Gallons of Material (gallons/unit)

Appendix A: Emission Calculations
 Particulate Emissions From Woodworking Operations

Company Name: Lengacher's Furniture & Cabinets
 Address: 16306 Cuba Road Spencerville, IN 46788
 Registration: 003-25226-00357
 Reviewer: SEC
 Date: September 20, 2007

Woodworking Operations WW

Baghouse ID	Process Weight Rate (lbs/hour)	Sawdust Collected* (lbs/hour)	Collection/Control Efficiency (%)	Uncontrolled PTE of PM/PM10 (tons/year)	Uncontrolled PTE of PM/PM10 (lbs/hour)	Controlled PTE of PM/PM10 (tons/year)	Controlled PTE of PM/PM10 (lbs/hour)	326 IAC 6-3-2 Allowable PM Emission
WW-DC1	27	5.03	99.00%	22.25	5.08	0.22	0.050	0.551

PTE TOTALS: 22.25
ACTUAL TOTALS: 5.28**

Assume all PM is equal to PM10. Assume all sawdust collected is PM / PM10.

The dust collector exhausts inside the building.

The process weight rate for the woodworking operations is 27 pounds per hour.

*Based on reported amount of sa (Highest PTE of VOC lb/hr x 8 hours per day)

**Based on reported operation of 5 days per week, 8 hours per day, 52 weeks per year.

Methodology

PTE of PM/PM10 Uncontrolled (tons/year) = Sawdust Collected (lbs/hour) / (Control Efficiency %) x 8760 (hours/year) x 1 ton/2000 lbs

PTE of PM/PM10 Uncontrolled (lbs/hour) = Sawdust Collected (lbs/hour) / (Control Efficiency %)

PTE of PM/PM10 Controlled (tons/year) = Sawdust Collected (lbs/hour) x (1 - Control Efficiency %) x 8760 (hours/year) x 1 ton/2000 lbs

PTE of PM/PM10 Controlled (lbs/hour) = Sawdust Collected (lbs/hour) x (1 - Control Efficiency %)

Actual Emissions of PM/PM10 Uncontrolled (tons/year) = Sawdust Collected (lbs/hour) / (Control Efficiency %) x 2080 (hours/year) x 1 ton/2000 lbs

Actual Emissions of PM/PM10 Controlled (tons/year) = Sawdust Collected (lbs/hour) x (1 - Control Efficiency %) x 2080 (hours/year) x 1 ton/2000 lbs

326 IAC 6-3-2 Allowable PM Emission Rate (lbs/hour) = 0.551 (for process weight rates of 100 lb/hr or less).

Company Name: Lengacher's Furniture & Cabinets
Address: 16306 Cuba Road Spencerville, IN 46788
Registration: 003-25226-00357
Reviewer: SEC
Date: September 20, 2007

Heat Input Capacity= 0.10 MMBtu/hr

Potential Throughput = 876 MMBtu/yr

Actual Throughput = 208 MMBtu/yr

HAPs - Organics					
Emission Factor in lb/MMBtu	Benzene 1.9E-07	Dichlorobenzene 1.1E-07	Formaldehyde 6.7E-06	Hexane 1.6E-04	Toluene 3.1E-07
Potential Emission in tons/yr	8.3E-08	4.7E-08	2.9E-06	7.1E-05	1.3E-07
Actual Emissions in tons/yr	2.0E-08	1.1E-08	7.0E-07	1.7E-05	3.2E-08

HAPs - Metals					
Emission Factor in lb/MMBtu	Lead 4.5E-08	Cadmium 9.9E-08	Chromium 1.3E-07	Manganese 3.4E-08	Nickel 1.9E-07
Potential Emission in tons/yr	1.965E-08	4.322E-08	5.501E-08	1.493E-08	8.251E-08
Actual Emissions in tons/yr	4.7E-09	1.0E-08	1.3E-08	3.5E-09	2.0E-08

The HAP emission factors (EF) are converted from lb/10⁶scf to lb/MMBtu by multiplying by the factor, 1 MMCF/1020 MMBtu. The natural gas EF are then converted to propane by multiplying by the ratio of the heating value of propane to the average heating value for natural gas, 91.5/1020. The resulting EF is in lb/MMBtu.

Methodology

1 MMCF/1,020 MMBtu

Heating Value_(propane) = 91.5 MMBtu/10³ gal.

Heating Value_(natural gas) = 1020 MMBtu/10³ gal.

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

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

Actual Throughput (MMBtu/year) = Heat Input Capacity (MMBtu/hr) x 2080 hrs/yr

Actual Emissions (tons/yr) = Throughput (MMBtu/yr) x Emission Factor (lb/MMBtu) / 2,000 lb/ton

Emission Factors are from AP42 (Supplement B 10/96), Tables 1.5-1, 1.4-4, 1.4-3, 1.4-2.

Appendix A: Emission Calculations
 Combustion Emissions from the Propane Fired Heater

Company Name: Lengacher's Furniture & Cabinets
 Address: 16306 Cuba Road Spencerville, IN 46788
 Registration: 003-25226-00357
 Reviewer: SEC
 Date: September 20, 2007

Description	Heat Input Capacity (MMBtu/hr)		Max.Potential Throughput (MMBtu/yr)		Actual Throughput (MMBtu/yr)	
Propane Fired Heater	0.10		876		208	
Pollutant Emission Factors (lbs/MMBtu)						
	PM	PM10*	SO₂	NO_x**	CO	VOC
	0.0044	0.0044	0.1093	0.1530	0.0208	0.0055
Potential To Emit (tons/yr)						
Emission Unit ID	PM	PM10	SO₂	NO_x	CO	VOC
Propane Fired Heater	1.9E-03	1.9E-03	4.8E-02	6.7E-02	9.1E-03	2.4E-03
Actual Emissions (tons/yr)						
Emission Unit ID	PM	PM10	SO₂	NO_x	CO	VOC
Propane Fired Heater	4.5E-04	4.5E-04	1.1E-02	1.6E-02	2.2E-03	5.7E-04

Sulfur Content= 100 gr/100 ft³

PM10 emission factor is for condensable and filterable PM10 combined.

**Emission Factors for NOx: Uncontrolled = 100 lbs/MMCF

Emission Factors from AP-42, Chapter 1.5 - Liquefied Petroleum Gas Combustion, Table 1.5-1

All emission factors are based on normal firing.

1 MMCF/1,000 MMBtu

MMCF = 1,000,000 Cubic Feet of Gas

Conversion (per EPA 42): To convert the emission factors for propane from lb/10³SCF to lb/MMBtu = Emission Factor (lb/1000SCF) /Heating Value of natural gas)

Heating Value (propane) = 91,500 Btu/gal = 0.0915 MMBtu/gal

Methodology

Max Potential Throughput (MMBtu/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr

PTE (tons/yr) = Max Potential Throughput (MMBtu/yr) x Emission Factor (lb/MMBtu) / 2,000 lb/ton

Actual Throughput (MMBtu/year) = Heat Input Capacity (MMBtu/hr) x 2080 hrs/yr

Actual Emissions (tons/yr) = Max Potential Throughput (MMBtu/yr) x Emission Factor (lb/MMBtu) / 2,000 lb/ton

**Appendix A: Emission Calculations
Internal Combustion Engines - Diesel Fuel
<600 HP
Reciprocating**

Company Name: Lengacher's Furniture & Cabinets
 Address: 16306 Cuba Road Spencerville, IN 46788
 Registration: 003-25226-00357
 Reviewer: SEC
 Date: September 20, 2007

A. Emissions calculated based on heat input capacity (MMBtu/hr)

Heat Input Capacity MMBtu/hr	S = Weight % Sulfur	Potential Throughput MMBtu/year	Actual Throughput MMBtu/year
0.15	0.5	1314	1040

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMBtu	0.31	0.31	0.29	4.41	0.35	0.95
Potential Emission in tons/yr	0.20	0.20	0.19	2.90	0.23	0.62
Actual Emission in tons/yr	0.16	0.16	0.15	2.29	0.18	0.49

Methodology

Emission Factors are from AP42 (Supplement B 10/96), Table 3.3-1

Potential Throughput (MMBtu/yr = Heat Input Capacity (MMBtu/hr) x 8760 (hr/year)

Actual Throughput (MMBtu/yr = Heat Input Capacity (MMBtu/hr) x 2080 (hr/year)

Maximum Potential Emission (tons/yr) = [Potential Throughput (MMBtu/yr) x Emission Factor (lb/MMBtu)] / (2,000 lb/ton)

Actual Emission (tons/yr) = [Actual throughput (MMBtu/yr) x Emission Factor (lb/MMBtu)] / (2,000 lb/ton)

*PM emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

Company Name: Lengacher's Furniture & Cabinets
Address: 16306 Cuba Road Spencerville, IN 46788
Registration: 003-25226-00357
Reviewer: SEC
Date: September 20, 2007

Heat Input Capacity= 0.15 MMBtu/hr

Emission Factor in lb/MMBtu	HAPs				
	Benzene	Xylenes	Formaldehyde	Acetaldehyde	Toluene
Potential Emission in tons/yr	9.3E-04	2.9E-04	1.2E-03	7.7E-04	4.1E-04
Potential Emission in tons/yr	6.1E-04	1.9E-04	7.8E-04	5.0E-04	2.7E-04
Actual Emissions in tons/yr	1.5E-04	4.4E-05	1.8E-04	1.2E-04	6.4E-05

Emission Factor in lb/MMBtu	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Potential Emission in tons/yr	5.0E-07	1.1E-06	1.4E-06	3.8E-07	2.1E-06
Potential Emission in tons/yr	3.285E-07	7.227E-07	9.198E-07	2.497E-07	1.380E-06
Actual Emissions in tons/yr	7.800E-08	1.716E-07	2.184E-07	5.928E-08	3.276E-07

Total PTE HAPs= 0.00235 tons/year
Highest single HAP= 0.00078 tons/year

Methodology

The five highest organic HAP emission factors are provided above. Additional HAPs emission factors are available in AP-42, Chapter 3.3, Table 3.3-3

Emission Factors are from AP42 (Supplement B 10/96), Table 3.3-1

Maximum Potential Emission (tons/yr) = [Heat input rate (MMBtu/hr) x Emission Factor (lb/MMBtu)] * 8760 hr/yr / (2,000 lb/ton)

Actual Emission (tons/yr) = [Heat input rate (MMBtu/hr) x Emission Factor (lb/MMBtu)] * 2080 hr/yr / (2,000 lb/ton)

Company Name: Lengacher's Furniture & Cabinets
Address: 16306 Cuba Road Spencerville, IN 46788
Registration: 003-25226-00357
Reviewer: SEC
Date: September 20, 2007

Category	Uncontrolled Potential Emissions (tons/year)					
	Emissions Generating Activity					
	Pollutant	Emission Units				TOTAL (tons/yr)
		Surface Coating Spray Booth 1	Wood-working Operation	Propane Heater	Diesel Generator	
Criteria Pollutants	PM	0.86	22.25	1.9E-03	0.20	23.31
	PM10	0.86	22.25	1.9E-03	0.20	23.31
	SO2			4.8E-02	0.19	0.24
	NOx			6.7E-02	2.90	2.97
	VOC	3.79		2.4E-03	0.23	4.02
	CO			9.1E-03	0.62	0.63
Hazardous Air Pollutants	Acetaldehyde				5.0E-04	0.001
	Xylenes	0.52			1.9E-04	0.520
	Ethylbenzene	0.04				0.040
	n-Hexane			7.1E-05		7.1E-05
	Toluene	1.29		1.3E-07	2.7E-04	1.290
	Benzene			8.3E-08	6.1E-04	6.1E-04
	Dichlorobenzene			4.7E-08		4.7E-08
	Formaldehyde	0.04		2.9E-06	7.8E-04	0.041
	Lead			2.0E-08	3.3E-07	3.5E-07
	Cadmium			4.3E-08	7.2E-07	7.7E-07
	Chromium			5.5E-08	9.2E-07	9.7E-07
	Manganese			1.5E-08	2.5E-07	2.6E-07
	Nickel			8.3E-08	1.4E-06	1.5E-06
	Totals	1.89	0.0	7.4E-05	0.0024	1.89
	Highest Single HAP =					1.29

Total emissions based on rated capacity at 8,760 hours/year.

Company Name: Lengacher's Furniture & Cabinets
 Address: 16306 Cuba Road Spencerville, IN 46788
 Registration: 003-25226-00357
 Reviewer: SEC
 Date: September 20, 2007

Category Criteria Pollutants	Controlled Potential Emissions (tons/year)					
	Emissions Generating Activity					
	Pollutant	Emission Units				TOTAL (tons/yr)
		Surface Coating Spray Booth 1	Wood- working Operation	Propane Heater	Diesel Generator	
PM	0.17	0.22	0.002	0.200	0.59	
PM10	0.17	0.22	0.002	0.200	0.59	
SO2			0.048	0.190	0.24	
NOx			0.067	2.900	2.97	
VOC	3.79		0.002	0.230	4.02	
CO			0.009	0.620	0.63	
Hazardous Air Pollutants	Acetaldehyde			5.0E-04	0.001	
	Xylenes	0.52		1.9E-04	0.520	
	Ethylbenzene	0.04			4.0E-02	
	n-Hexane			7.1E-05	7.1E-05	
	Toluene	1.29		1.3E-07	2.7E-04	1.290
	Benzene			8.3E-08	6.1E-04	6.1E-04
	Dichlorobenzene			4.7E-08		4.7E-08
	Formaldehyde	0.04		2.9E-06	7.8E-04	0.041
	Lead			2.0E-08	6.3E-07	6.5E-07
	Cadmium			4.3E-08	7.2E-07	7.7E-07
	Chromium			5.5E-08	9.2E-07	9.7E-07
	Manganese			1.5E-08	2.5E-07	2.6E-07
	Nickel			8.3E-08	1.4E-06	1.5E-06
HAP Totals	1.89	0	7.4E-05	0.0024	1.89	
			Highest Single HAP =		1.29	

Total emissions based on rated capacity at 8,760 hours/year.

Company Name: Lengacher's Furniture & Cabinets
Address: 16306 Cuba Road Spencerville, IN 46788
Registration: 003-25226-00357
Reviewer: SEC
Date: September 20, 2007

Category	Actual Emissions (tons/year)					
	Emissions Generating Activity					
	Pollutant	Emission Units				TOTAL (tons/yr)
		Surface Coating Spray Booth 1	Wood-working Operation	Propane Heater	Diesel Generator	
Criteria Pollutants	PM	0.04	5.28	0.0005	0.1600	5.48
	PM10	0.04	5.28	0.0005	0.1600	5.48
	SO2			0.0110	0.1500	0.16
	NOx			0.0160	2.2900	2.31
	VOC	0.90		0.0006	0.1800	1.08
	CO			0.0022	0.4900	0.49
Hazardous Air Pollutants	Acetaldehyde				1.2E-04	1.2E-04
	Xylenes	0.12			4.4E-05	0.120
	Ethylbenzene	0.01				0.010
	n-Hexane			1.7E-05		1.7E-05
	Toluene	0.31		3.2E-08	6.4E-05	0.310
	Benzene			2.0E-08	1.5E-04	1.5E-04
	Dichlorobenzene			1.1E-08		1.1E-08
	Formaldehyde	0.01		7.0E-07	1.8E-04	0.010
	Lead			4.7E-09	7.8E-08	8.3E-08
	Cadmium			1.0E-08	1.7E-07	1.8E-07
	Chromium			1.3E-08	2.2E-07	2.3E-07
	Manganese			3.5E-09	5.9E-08	6.3E-08
	Nickel			2.0E-08	3.3E-07	3.5E-07
		HAP Totals =	0.45	0.00	1.8E-05	5.6E-04
				Highest Single HAP =	0.31	

Actual emissions based on reported capacity at 2,080 hours/year.