



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

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

Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

TO: Interested Parties / Applicant

DATE: August 22, 2013

RE: Progressive Materials, LLC/043-33275-00065

FROM: Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

Notice of Decision – Approval

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 326 IAC 2, this approval was effective immediately upon submittal of the application.

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, Suite N 501E, Indianapolis, IN 46204, **within eighteen (18) calendar days from 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
FNPER-AM.dot 6/13/2013



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Michael R. Pence
Governor

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Danielle Wells, Operations Manager
Progressive Materials, LLC
540 Central Court
New Albany, IN 47150

August 22, 2013

Re: Exempt Construction and Operation Status,
E043-33275-00065

Dear Ms. Wells:

The application from Progressive Materials, LLC, received on June 5, 2013, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-1.1-3, it has been determined that the following stationary silicone compound plant located at 540 Central Court, New Albany, IN 47150 is classified as exempt from air pollution permit requirements:

- (a) One (1) silicone blend line, identified as Line 1, constructed in 2012, with a maximum capacity of 1,165 pounds of materials per hour and consisting of:
 - (1) One (1) mixer, identified as Mixer 1, utilizing no control equipment, and exhausting within the building.
 - (2) One (1) material transfer system (raw and finished material conveyance), identified as Transfer 1, either hand delivered or by pump, utilizing no control equipment, and exhausting within the building.
- (b) Natural gas combustion of 1.08 MMBTu per hour.
- (c) Paved roads

The following conditions shall be applicable:

- (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, 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 as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute non-overlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.
- (2) 326 IAC 6-4 (Fugitive Dust Emissions Limitations)
Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the source 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.



- (3) Pursuant to IAC 6-3-2, particulate emissions from each of the following operations shall not exceed the pound per hour limitation listed in the table below:

Line	Process Description	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
1	Mixing Operation	0.583	2.855
	Raw Material Conveyance	0.583	2.855
	Finished Material Conveyance	0.583	2.855

The pounds per hour limitations were calculated using the following equation:

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

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

This exemption is the first air approval issued to this source.

A copy of the Exemption is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>. For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source. If you have any questions on this matter, please contact Deborah Cole, permit reviewer, OAQ, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana, 46204-2251, at 317-234-5377 or at 1-800-451-6027 (ext 4-5377).

Sincerely,



Iryn Calitung, Section Chief
Permits Branch
Office of Air Quality

IC/dac

cc: File - Floyd County
Floyd County Health Department
Compliance and Enforcement Branch

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

Technical Support Document (TSD) for an Exemption

Source Description and Location
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Source Name:	Progressive Materials, LLC
Source Location:	540 Central Court, New Albany, IN 47150
County:	Floyd
SIC Code:	3087 (Custom Compounding of Purchased Plastic Resins)
Exemption No.:	E 043-33275-00065
Permit Reviewer:	Deborah Cole

On June 5, 2013, the Office of Air Quality (OAQ) received an application from Progressive Materials, LLC related to the operation of an existing stationary silicone compound plant.

Existing Approvals

There have been no previous approvals issued to this source.

County Attainment Status

The source is located in Floyd County.

Pollutant	Designation
SO ₂	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O ₃	Attainment effective July 19, 2007, for the 8-hour ozone standard. ¹
PM ₁₀	Unclassifiable effective November 15, 1990.
NO ₂	Cannot be classified or better than national standards.
Pb	Not designated.
¹ Attainment effective October 23, 2001, for the 1-hour ozone standard for the Louisville area, including Floyd County, and is a maintenance area for the 1-hour ozone National Ambient Air Quality Standard (NAAQS) for purposes of 40 CFR Part 51, Subpart X*. The 1-hour standard was revoked effective June 15, 2005. Basic nonattainment designation effective federally April 5, 2005, for PM _{2.5} .	

- (a) **Ozone Standards**
Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to ozone. Floyd County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

- (b) **PM_{2.5}**
U.S. EPA, in the Federal Register Notice 70 FR 943 dated January 5, 2005, has designated Floyd County as nonattainment for PM_{2.5}. On March 7, 2005 the Indiana Attorney General's Office, on behalf of IDEM, filed a lawsuit with the Court of Appeals for the District of Columbia Circuit challenging U.S. EPA's designation of nonattainment areas without sufficient data. However, in order to ensure that sources are not potentially liable for a violation of the Clean Air Act, the OAQ is following the U.S. EPA's New Source Review Rule for PM_{2.5} promulgated on May 8, 2008. These rules became effective on July 15, 2008. Therefore, direct PM_{2.5} and SO₂ emissions were reviewed pursuant to the

requirements of Nonattainment New Source Review, 326 IAC 2-1.1-5. See the State Rule Applicability – Entire Source section.

- (c) Other Criteria Pollutants
Floyd 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.

Fugitive Emissions

The fugitive emissions of criteria pollutants, hazardous air pollutants, and greenhouse gases are counted toward the determination of 326 IAC 2-1.1-3 (Exemptions) applicability.

Background and Description of Emission Units and Pollution Control Equipment

The Office of Air Quality (OAQ) has reviewed an application, submitted by Progressive Materials on June 5, 2013, relating to the operation of a silicone compound plant located at 540 Central Court, New Albany, IN 47150.

The source consists of the following existing emission unit(s):

- (a) One (1) silicone blend line, identified as Line 1, constructed in 2012, with a maximum capacity of 1,165 pounds of materials per hour and consisting of:
- (1) One (1) mixer, identified as Mixer 1, utilizing no control equipment, and exhausting within the building.
 - (2) One (1) material transfer system (raw and finished material conveyance), identified as Transfer 1, either hand delivered or by pump, utilizing no control equipment, and exhausting within the building.
- (b) Natural gas combustion of 1.08 MMBTu per hour.
- (c) Paved roads

Enforcement Issues

The source was inspected by IDEM on January 30, 2013 as an unpermitted source. It was noted that unpermitted emission units were constructed and operating. The source was issued an Inspection Summary letter instructing them to submit an air permit application to IDEM in order to determine the proper permitting level. The source submitted an application to IDEM on June 5, 2013. After review of the application, IDEM determined that the source was at the Exemption level.

Therefore, there are no pending enforcement actions related to this source.

Emission Calculations

See Appendix A of this TSD for detailed emission calculations.

Permit Level Determination – Exemption

The following table reflects the unlimited potential to emit (PTE) of the entire source before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Process/ Emission Unit	Potential To Emit of the Entire Source (tons/year)									
	PM	PM10*	PM2.5*	SO ₂	NO _x	VOC	CO	GHGs as CO ₂ e**	Total HAPs	Worst Single HAP
Mixing Operation	0.48	0.48	0.48	-	-	1.92	-	-	-	-
Material Conveyance	0.97	0.97	0.97	-	-	-	-	-	-	-
Natural Gas Combustion	0.01	0.04	0.04	0.00	0.46	0.03	0.39	559.90	0.009	0.008 (Hexane)
Paved Roads	0.07	0.01	0.00	-	-	-	-	-	-	-
Total PTE of Entire Source	1.53	1.50	1.49	0.00	0.46	1.95	0.39	559.90	0.009	
Exemptions Levels**	< 5	< 5	< 5	< 10	< 10	< 5 or	< 25	< 100,000	< 25	< 10

negl. = negligible
 *Under the Part 70 Permit program (40 CFR 70), PM10 and PM2.5, not particulate matter (PM), are each considered as a regulated air pollutant".
 **The 100,000 CO₂e threshold represents the Title V and PSD subject to regulation thresholds for GHGs in order to determine whether a source's emissions are a regulated NSR pollutant under Title V and PSD.

- (a) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1) of all regulated criteria pollutants are less than the levels listed in 326 IAC 2-1.1-3(e)(1). Therefore, the source is subject to the provisions of 326 IAC 2-1.1-3 (Exemptions).
- (b) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1) of any single HAP is less than ten (10) tons per year and the PTE of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-7.
- (c) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1) greenhouse gases (GHGs) is less than the Title V subject to regulation threshold of one hundred thousand (100,000) tons of CO₂ equivalent emissions (CO₂e) per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.

Federal Rule Applicability Determination

New Source Performance Standards (NSPS)

There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in the permit.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in the permit.

Compliance Assurance Monitoring (CAM)

Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is not included in the permit, because the unlimited potential to emit of the source is less than the Title V major source thresholds and the source is not required to obtain a Part 70 or Part 71 permit.

State Rule Applicability Determination

The following state rules are applicable to the source:

- (a) 326 IAC 2-1.1-3 (Exemptions)
Exemption applicability is discussed under the Permit Level Determination – Exemption section above.
- (b) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
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. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-4.1.
- (c) 326 IAC 2-6 (Emission Reporting)
Pursuant to 326 IAC 2-6-1, this source is not subject to this rule, because it is not required to have an operating permit under 326 IAC 2-7 (Part 70), it is not located in Lake, Porter, or LaPorte County, and it does not emit lead into the ambient air at levels equal to or greater than 5 tons per year. Therefore, 326 IAC 2-6 does not apply.
- (d) 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:
 - (1) 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.
 - (2) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.
- (e) 326 IAC 6-4 (Fugitive Dust Emissions Limitations)
Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the source 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.
- (f) 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)
The source is not subject to the requirements of 326 IAC 6-5, because the source does not have potential fugitive particulate emissions greater than 25 tons per year. Therefore, 326 IAC 6-5 does not apply.

Mixing Line

- (g) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 326 IAC 6-3-2, particulate emissions from each of following operations shall not exceed the pound per hour limit listed in the table below:

Line	Process Description	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
1	Mixing Operation	0.583	2.855
	Raw Material Conveyance	0.583	2.855
	Finished Material Conveyance	0.583	2.855

The pounds per hour limitations were calculated using the following equation:

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

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

Conclusion and Recommendation

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant. An application for the purposes of this review was received on June 5, 2013. Additional information was received on July 18, 2013.

The operation of this source shall be subject to the conditions of the attached proposed Exemption No. 043-33275-00065. The staff recommends to the Commissioner that this Exemption be approved.

IDEM Contact

- (a) Questions regarding this proposed permit can be directed to Deborah Cole at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 234-5377 or toll free at 1-800-451-6027 ext. 4-5377.
- (b) A copy of the findings is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>
- (c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.in.gov/idem

**Appendix A: Emission Calculations
Emission Summary**

Company Name: Progressive Materials, LLC
Address City IN Zip: 540 Central Court, New Albany, IN 47150
Permit Number: 043-33275-00065
Reviewer: Deborah Cole

Pollutant	PM	PM10	PM2.5	SO2	NOX	VOC	CO	GHG	Total HAPS	Single HAP
Mixing Operation	0.48	0.48	0.48	0.00	0.00	1.919	0.00	0.00	0.000	0.00
Material Conveyance	0.97	0.97	0.97	0.00	0.00	0.000	0.00	0.00	0.000	0.000
Natural Gas Combustion	0.01	0.04	0.04	0.00	0.46	0.026	0.39	559.90	0.009	0.008
Paved Roads	0.07	0.01	0.00	0.00	0.00	0.000	0.00	0.00	0.000	0.00
TOTALS	1.53	1.50	1.49	0.00	0.46	1.944	0.39	559.90	0.009	

Hexane

PTE is based on 8,760 hours of operation.

**Appendix A: Emissions Calculations
Particulate Emissions From Line 1 Mixing**

Company Name: Progressive Materials, LLC
Address: 540 Central Court, New Albany, IN 47150
Permit Number: 043-33275-00065
Reviewer: Deborah Cole

Mixer	Max Throughput	Emission Factor	PM/PM10/PM2.5 Emission Rate	
	(lb/hr)		(lb/ton)	(lb/hr)
1	1,165.00	0.19	0.11	0.48
Total:			0.11	0.48

Note:

Emission Factor for powder being loaded into the mixer is based on AP-42 Chapter 8.2 Table 8.2-1 for urea bagging. The emission factor has been previously accepted for a similar process at Cereplast, Inc., Exemption # 071-30682-00044, issued on August 18, 2011.

Methodology:

Uncontrolled Emission Rate (lb/hr) = Max Throughput (lb/hr) * Emission Factor (lb/ton) * 1 ton / 2,000 lbs

Uncontrolled Emission rate (ton/yr) = Uncontrolled Emission Rate (lb/hr) * 8,760 hrs x 1 ton / 2,000 lbs

Controlled Emission Rate (lb/hr) = Uncontrolled Emission Rate (lb/hr) * (1 - control efficiency)

Controlled Emission Rate (ton/yr) = Controlled Emission Rate (lb/hr) * 8,760 hrs x 1 ton / 2,000 lbs

326 IAC 6-3-2(e) Allowable Rate of Emissions

	Process Rate (materials throughput)	Process Weight Rate	Allowable PM Emissions
	(lbs/hr)	(tons/hr)	(lbs/hr)
Mixer 1	1,165.00	0.58	2.85

Methodology

Allowable Emissions (E) (lb/hr) = 4.10(Process Weight Rate)^{0.67}

Allowable Emissions (tons/yr) = (Allowable Emissions (lb/hr)*8760)/2000

**Appendix A: Emissions Calculations
VOC Emissions From Line 1 Mixing**

Company Name: Progressive Materials, LLC
Address: 540 Central Court, New Albany, IN 47150
Permit Number: 043-33275-00065
Reviewer: Deborah Cole

VOC

Material	Specific Gravity	Weight of Water (lb/gal)	% VOC	Pounds per Hour*	% of total Mix	VOC (lbs/year)	VOC (tons/year)
OHX-4012	0.77	8.34	100%	312.00	0.267811	2,014.01	1.01
360 Solvent	0.97	8.34	100%	187.00	0.160515	1,515.91	0.76
Andisil MOS Cross Linker	0.97	8.34	100%	37.00	0.031760	299.32	0.15
Cat 41	1.00	8.34	100%	1.00	0.000858	8.34	0.00
TOTAL						3,837.58	1.92

*Pounds per hour = % 1,165.00 total pounds of mix per hour.

Methodology

PTE VOC (tons/yr) = Specific Gravity x Weight of Water x %VOC x maxium usage (lbs/hr) x 1 ton/2,000 lbs

**Appendix A: Emissions Calculations
Potential Emissions From Material Handling / Conveying**

Company Name: Progressive Materials, LLC
Address: 540 Central Court, New Albany, IN 47150
Permit Number: 043-33275-00065
Reviewer: Deborah Cole

Line 1

Description	Max Throughput (lb/hr)	Emission Factor (lb/ton)	PM/PM10/PM2.5 Emission Rate	
			(lb/hr)	(ton/yr)
Raw Material Conveyance *	1,165.00	0.19	0.11	0.48
Finished Good Conveyance**	1,165.00	0.19	0.11	0.48
Total:			0.22	0.97

*Worst Case - if all material was hand-delivered to the mixer

**Worst Case - if finished material needed to be removed from mixer by hand instead of pump

Note:

Emission Factor for conveyance of pellets is based on AP-42 Chapter 8.2 Table 8.2-1 for urea bagging.

Methodology:

Uncontrolled Emission Rate (lb/hr) = Max Throughput (lb/hr) * Emission Factor (lb/ton) * 1 ton / 2,000 lbs

Uncontrolled Emission rate (ton/yr) = Uncontrolled Emission Rate (lb/hr) * 8,760 hrs x 1 ton / 2,000 lbs

Controlled Emission Rate (lb/hr) = Uncontrolled Emission Rate (lb/hr) * (1 - control efficiency)

Controlled Emission Rate (ton/yr) = Controlled Emission Rate (lb/hr) * 8,760 hrs x 1 ton / 2,000 lbs

326 IAC 6-3-2(e) Allowable Rate of Emissions

	Process Rate (materials throughput)	Process Weight Rate	Allowable PM Emissions
	(lbs/hr)	(tons/hr)	(lbs/hr)
Raw Material Conveyance	1,165.00	0.58	2.85
Finished Material Conveyance	1,165.00	0.58	2.85

Methodology

Allowable Emissions (E) (lb/hr) = 4.10(Process Weight Rate)^{0.67}

Allowable Emissions (tons/yr) = (Allowable Emissions (lb/hr)*8760)/2000

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

**Company Name: Progressive Materials, LLC
Address : 540 Central Court, New Albany, IN 47150
Permit Number: 043-33275-00065
Reviewer: Deborah Cole**

Unit	Heat Input Capacity MMBtu/hr	HHV	Potential Throughput MMCF/yr
		mmBtu mmscf 1020	
Reznor	0.15		1.3
Modine	0.15		1.3
Modine	0.29		2.5
Modine	0.29		2.5
Sterling	0.20		1.7
	1.08		9.3

Emission Factor in lb/MMCF	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
	1.9	7.6	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.01	0.04	0.04	0.00	0.46	0.03	0.39

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
PM2.5 emission factor is filterable and condensable PM2.5 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

HAPS Calculations

Emission Factor in lb/MMcf	HAPs - Organics					Total - Organics
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	
	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	
Potential Emission in tons/yr	0.00001	0.00001	0.00035	0.00835	0.00002	0.00873

Emission Factor in lb/MMcf	HAPs - Metals					Total - Metals
	Lead	Cadmium	Chromium	Manganese	Nickel	
	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03	
Potential Emission in tons/yr	0.00000	0.00001	0.00001	0.00000	0.00001	0.00003
	Total HAPs					0.00875
	Worst HAP					0.00835

Methodology is the same as above.

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

Greenhouse Gas Calculations

Emission Factor in lb/MMcf	Greenhouse Gas		
	CO2	CH4	N2O
	120,000	2.3	2.2
Potential Emission in tons/yr	556.52	0.01	0.01
Summed Potential Emissions in tons/yr	556.54		
CO2e Total in tons/yr	559.90		

Methodology

The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Appendix A: Emission Calculations
Fugitive Dust Emissions - Paved Roads

Company Name: Progressive Materials, LLC
Address: 540 Central Court, New Albany, IN 47150
Permit Number: 043-33275-00065
Reviewer: Deborah Cole

Paved Roads at Industrial Site

The following calculations determine the amount of emissions created by paved roads, based on 8,760 hours of use and AP-42, Ch 13.2.1 (1/2011).

Vehicle Information (provided by source)

Type	Maximum number of vehicles per day	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight Loaded (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Vehicle (entering plant) (one-way trip)	8.0	2.0	16.0	1.0	16.0	10,000.00	1.89	30.30	11,060.61
Vehicle (leaving plant) (one-way trip)	8.0	2.0	16.0	1.0	16.0	10,000.00	1.89	30.30	11,060.61
Totals			32.0		32.0			60.61	22,121.21

Average Vehicle Weight Per Trip = $\frac{1.0}{1.89}$ tons/trip
Average Miles Per Trip = $\frac{1.89}{1.89}$ miles/trip

Unmitigated Emission Factor, Ef = $[k * (sL)^{0.91} * (W)^{1.02}]$ (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.011	0.0022	0.00054	lb/VMT = particle size multiplier (AP-42 Table 13.2.1-1)
W =	1.0	1.0	1.0	tons = average vehicle weight (provided by source)
sL =	0.6	0.6	0.6	g/m ² = Ubiquitous Baseline silt loading value for paved roads - AP-42 Table 13.2.1-2

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = $E * [1 - (p/4N)]$ (Equation 2 from AP-42 13.2.1)

Mitigated Emission Factor, Eext = $Ef * [1 - (p/4N)]$
where p = $\frac{125}{365}$ days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)
N = 365 days per year

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	0.007	0.001	0.0003	lb/mile
Mitigated Emission Factor, Eext =	0.006	0.001	0.0003	lb/mile
Dust Control Efficiency =	0%	0%	0%	

Process	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Vehicle (entering plant) (one-way trip)	0.04	0.01	0.00	0.03	0.01	0.00	0.03	0.01	0.00
Vehicle (leaving plant) (one-way trip)	0.04	0.01	0.00	0.03	0.01	0.00	0.03	0.01	0.00
Totals	0.08	0.02	0.00	0.070	0.014	0.003	0.070	0.014	0.003

Methodology

Total Weight driven per day (ton/day) = [Maximum Weight Loaded (tons/trip)] * [Maximum trips per day (trip/day)]
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]
Maximum one-way miles (miles/day) = [Maximum trips per year (trip/day)] * [Maximum one-way distance (mi/trip)]
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]
Unmitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] * [Unmitigated Emission Factor (lb/mile)] * (ton/2000 lbs)
Mitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] * [Mitigated Emission Factor (lb/mile)] * (ton/2000 lbs)
Controlled PTE (tons/yr) = [Mitigated PTE (tons/yr)] * [1 - Dust Control Efficiency]

Abbreviations

PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particle Matter (<2.5 um)
PTE = Potential to Emit



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

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Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED

TO: Danielle Wells
Progressive Materials, LLC
540 Central Court
New Albany, IN 47150

DATE: August 22, 2013

FROM: Matt Stuckey, Branch Chief
Permits Branch
Office of Air Quality

SUBJECT: Final Decision
Exempt Construction and Operation Status
043-33275-00065

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at jbrush@idem.IN.gov.

Final Applicant Cover letter.dot 6/13/2013

Mail Code 61-53

IDEM Staff	PWAY 8/22/2013 Progressive Materials, LLC 043-33275 -00065(final)		Type of Mail: CERTIFICATE OF MAILING ONLY	AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender		Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204		

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee	Remarks
1		Danielle Wells Progressive Materials, LLC 540 Central Court New Albany IN 47150 (Source CAATS)										
2		Mr. Robert Bottom Paddlewheel Alliance P.O. Box 35531 Louisville KY 40232-5531 (Affected Party)										
3		Floyd County Commissioners 2524 Corydon Pike, Ste 204 New Albany IN 47150 (Local Official)										
4		New Albany City Council and Mayors Office City County Building #316 New Albany IN 47150 (Local Official)										
5		Floyd County Health Department 1917 Bono Rd New Albany IN 47150-4607 (Health Department)										
6		Ms. Sue Green 1985 Kopley Road Georgetown IN 47122 (Affected Party)										
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